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DESCRIPTIONS OF NEW NORTH AMERICAN ANTHOMYIIDAE
(DIPTERA)

BY J. R. MALLOCH

The present paper was originally prepared with a number of tables of species and references to previously known forms included. Editorial necessity and limitations of space have made necessary the restriction of the matter to the description of new species. The accompanying plates, however, contain illustrations of a number of previously known species, which it seemed best to have appear at this time. Reference subsequently will be made to these illustrations.

***Phaonia basiseta* sp. n.**

Male and female.—Black, slightly shining, densely yellowish brown pruinulent. Thorax with four black vittae. Abdomen with a poorly defined dorso-central black vitta and irregular checkerings. Wings clear, yellowish at bases. Calyptrae and halteres orange yellow.

Male.—Eyes distinctly hairy, separated at narrowest part of frons by a distance about equal to width across posterior ocelli; parafacial in profile much wider than third antennal joint and about half as wide as height of cheek, the latter with numerous moderately long marginal bristles, the upper series upwardly curved; vibrissa in line with lower margin of eye and much above lower margin of cheek, a few short bristles above vibrissa; antennae about two-thirds as long as face, third joint about 1.75 as long as second; arista with its longest hairs slightly shorter than width of third antennal joint. Thorax with four pairs of postsutural dorso-central bristles, no long presutural acrostichals, and the prealar bristle over half as long as the one behind it; hypopleura with a number of hairs on its upper margin in front of spiracle. Abdomen narrowly ovate; fifth sternite inconspicuously bristled. Fore tibia with two or three postero-ventral bristles; fore tarsus longer than fore tibia; mid femur with a few long bristles on basal half of postero-ventral surface; mid tibia with three or four postero-dorsal and three or four posterior bristles; hind femur with a series of bristles on the antero-ventral and another on the postero-ventral surface, the latter series sparse and the bristles short in middle; hind tibia with two or three antero-ventral and from four to six antero-dorsal bristles, the postero-dorsal surface with one or two short bristles near base in addition to the preapical calcar. One of the costal thorns much longer than the other; outer cross-vein slightly bent.

Female.—Eyes with very short hairs; frons narrowed slightly at vertex where it is less than one-third as wide as head. Abdomen with apex pointed, fourth tergite longer than third; genital processes of moderate length, with

numerous short, erect, stiff, and a few long slender hairs. Fore tibia with an antero-dorsal and two postero-ventral bristles; mid tibia with two antero-dorsal bristles in addition to the same bristles as in the male; hind femur with very short weak postero-ventral bristles. Costal thorns both very long. Length, 7 to 8 mm.

Type.—♂; Bozeman, Montana, June 18, 1913, [Montana Exper. Sta.]. *Paratypes*.—Bozeman, Montana, July 6, 1916; Waubay, South Dakota, June 6, 1918, (Aldrich). Three females and two males.

***Mydaea occidentalis* sp. n.**

Male.—Similar in color to *pagana* Fabricius. The female has the anterior lateral angles of the thorax broadly testaceous yellow.

The eyes of the male are separated at narrowest part of frons by at least as great a distance as width across posterior ocelli, while in *pagana* they are separated by about the width of anterior ocellus. The prealar bristle is much shorter than in *pagana*, and the male has no strong bristles on the sides of the posterior margin of the fourth tergite, but has two or more strong bristles on each side of fifth sternite, which are absent in *pagana*. Length, male, 6 mm.; female, 6.5 mm.

Type.—♂; Base Station, Mt. Washington, New Hampshire, July 7, [Boston Soc. Nat. Hist.]. *Allotype*.—♂; Bashbish Falls, Massachusetts, June 27, 1912, [Illinois].

I have seen no North American specimens of *pagana*. The European species *tinctoria* Zetterstedt is closely related to *occidentalis*, but the male has the eyes closer, and both sexes have the hind tibia with four or five, instead of two or three, antero-dorsal bristles.

***Mydaea persimilis* sp. n.**

Male and female.—This species along with *urbana* and *discimana* is black, slightly shining, covered with rather dense yellowish gray pruinescence, has the thorax quadrivittate and the abdomen with a dorso-central black vitta, and the legs yellowish testaceous. The wings in all three species are yellow at bases and the cross-veins are not infuscated. The antennae are entirely black in *persimilis*, and all the femora are pale in the female, while in the male they are largely blackened.

Structurally this species is similar to *urbana*, differing most noticeably in having the arista with short hairs, the longest of which are decidedly shorter than the width of third antennal joint; the prealar bristle is nearly half as long as the bristle behind it. Fore tarsi normal in form in female; fore tibia without median bristle. Fifth sternite in male with the posterior incision not regularly rounded as in *urbana*, the form in both species as shown in figures 3 and 4. Length, 6 to 8 mm.

Type.—♀; Lake Louise, Alberta, Canada, August 15, 1908, (Dr. C. S. Minot), [Illinois]. *Allotype*.—♂; Kodiak, Alaska,

June, 1917, (J. S. Hine). *Paratypes*.—Females; Mt. Ascutney, Vermont, July 11, 1908, (C. W. Johnson); Great Caribou Island, Labrador, July 27, 1906; Kodiak, Alaska, June, 1917, (J. S. Hine): male; Kodiak, Alaska, (J. S. Hine).

***Mydaea brevipilosa* sp. n.**

Male.—Similar to *persimilis* in habitus. Differs in having the fore femora pale, and the tarsi but little darker than the tibiae.

The arista has slightly longer hairs than in *persimilis*, the longest being almost as long as the width of the third antennal joint, and the hind femur has a few bristles on middle of postero-ventral surface, instead of on basal half as in *persimilis*.

Female.—Colored as the female of *persimilis*, but the second antennal joint is paler.

The parafacials are broader than in *persimilis*, and the arista shorter haired. Length, 6 to 8 mm.

Type.—♀; Algonquin, Illinois, July 2, 1904, (W. A. Nason), [Illinois]. *Allotype*.—♂; Ira, Summit County, Ohio, (J. S. Hine). *Paratypes*.—Males; Savanna, Illinois, June 13, 1917, (J. R. Malloch); Ira, Summit County, Ohio, (J. S. Hine); Manchester, Vermont, June 4, 1910, (C. W. Johnson); Stonington, Connecticut, June 15, 1906, (W. E. Britton): females; Ira, Summit County, Ohio, (J. S. Hine); St. Albans, Vermont, June 21, 1917, and Brattleboro, Vermont, July 15, 1908, (C. W. Johnson); Fogo Island, Newfoundland, July 29, 1908; Rigaud, Canada, July 28, 1911.

***Mydaea armata* sp. n.**

Female.—Black, slightly shining, covered with dense yellowish brown pruinescence. Head, including antennae and palpi, black, the face and cheeks obscured by dense yellowish brown pruinescence. Thorax less conspicuously quadrivittate than in *urbana*. Abdomen indistinctly checkered on dorsum. Legs reddish yellow, the greater portion of fore femora and all tarsi, fuscous. Bases of longitudinal veins, calyptreae and halteres orange-yellow.

Head in type slightly shrunken; each orbit with seven or eight strong bristles and numerous setulose hairs; antennae shorter than in other species of *Mydaea*, arista with the longest hairs barely longer than its basal diameter; cheek higher than width of third antennal joint, the lower margin with a rather closely-placed series of strong bristles, above which are numerous hairs and, at middle, one upwardly directed bristle. Thorax and abdomen as in *urbana*. Fore tibia with two bristles at middle, one posterior, and one postero-ventral; mid femur with a series of seven or eight strong bristles on basal half of postero-ventral surface; mid tibia with one postero-ventral and two posterior bristles; hind femur with a series of strong bristles from

base to apex on antero-ventral surface; hind tibia with two antero-dorsal and three or four antero-ventral bristles. Veins three and four very conspicuously divergent at apices. Length, 10 mm.

Type.—♀; Gallatin County, Montana, July 12, 1900, (E. Koch), [Illinois].

In the armature of the legs and the short-haired arista this species shows a departure from the general rule in this genus, but, as *persimilis* has the arista almost the same, I place *armata* in *Mydaea*, though I am unable to ascertain whether the structure of the penultimate abdominal segment corresponds with that of *urbana* and its allies.

***Mydaea discimana* sp. n.**

Male and female.—Similar in color to *persimilis*, femora and bases of wings yellow in both sexes.

Female.—Structurally closely resembles *persimilis*, but the fore tibia has a strong posterior bristle at middle, and the apical joint of fore tarsus is very conspicuously broadened, being as broad at the middle as it is long.

Male.—Very similar in general structure to the male of *neglecta*, the prealar bristle shorter than in *persimilis*, and the fore tarsus with the apical joint slightly but distinctly broadened. Length, 7.75 mm.

Type.—♀; New Bedford, Massachusetts, (Hough), [Illinois].
Allotype.—♂; Chester, Massachusetts, May 28, 1912, (C. W. Johnson).
Paratypes.—Males and females; Chester, Massachusetts, August 5, 1911; Sharon, Massachusetts, August 3, 1909; North Adams, Massachusetts, August 16; Williamsburg, Massachusetts, July 7, 1911; Glen House, New Hampshire, July 15, 1916; Bretton Woods, New Hampshire, June 24, 1913; Echo Lake, Mt. Desert, Maine, July 12, 1918; Machias, Maine, July 21, (C. W. Johnson). Eleven specimens.

***Mydaea neglecta* sp. n.**

Male and female.—Similar in color to *persimilis* and *urbana*, the fore femora of male largely blackened, and sometimes the bases of the mid pair also.

Structurally this species agrees closely with *discimana*, differing in having the apical joint of fore tarsi slender in both sexes. Length, 7 to 9 mm.

Type.—♂; Ramsey, New Jersey, June 5, 1916, [Illinois].
Allotype.—♀; New Bedford, Massachusetts, August 30, 1896, (Hough).
Paratypes.—Males; Plummer's Island, Maryland, May 10, 1916, (W. L. McAtee); Delaware County, Pennsylvania, May 5, 1895 (named *alone* Walker by Coquillett, but according to Stein, who has examined the type of Walker's species, *alone*

is a synonym of *ausoba* Walker, which belongs to the genus *Coenosa*; North Mountain, Pennsylvania, September 1; Falls Church, Virginia, June 28, 1912, (C. T. Greene); Rowayton, Connecticut, June 16, 1909; Danbury, Connecticut, June 15; Mt. Ascutney, Vermont, July 11, 1908; Brookline, Massachusetts, September 6; Sharon, Massachusetts, August 3; Chester, Massachusetts, July 25, 1913; Buttonwoods, Rhode Island, June 22, 1912, (C. W. Johnson); Broad Top, Texas.

One male from the same place, and with the same date, as the type differs from it in having the fore femora pale, but in other respects agrees with it and evidently is the same species.

***Helina hylemyioides* sp. n.**

Female.—Black, covered with yellowish gray pruinescence. Head entirely black. Thorax subopaque, with two narrow, distinctly separated vittae on anterior half between the dorso-centrals. Abdomen with an irregular central stripe and lateral checkering on dorsum. Legs black. Wings yellow at bases, the cross-veins slightly infuscated. Calyptrae yellow. Halteres yellow.

Frons at least one-third as wide as head at vertex, slightly broadened anteriorly, triangle very short, orbits narrow, with a few setulose hairs in addition to the five to six bristles; eyes almost bare; third antennal joint narrow, reaching almost to mouth-margin; arista haired to apex, the longest hairs about as long as width of third antennal joint; cheek slightly over one-third as high as eye, marginal bristles irregular, the upper two or three rows weak, no upwardly curved bristles present. Thorax without strong pre-sutural acrostichals; postsutural dorso-centrals, three; prealar bristle long; sternopleurals, three, the lower posterior one weak; ventral surface of scutellum with weak erect hairs to apex. Basal abdominal sternite with a few setulose hairs. Fore tibia with one posterior bristle; fore tarsi not thickened, longer than tibia; mid tibia with one or two antero-dorsal, two postero-dorsal, and two or three postero-ventral bristles; hind femur with long hair-like bristles from base to near apex on postero-ventral surface, and a few stronger bristles on apical half of antero-ventral surface; hind tibia with two strong antero-dorsal and four weaker antero-ventral bristles. Third vein bare at base; costal thorns long; veins three and four divergent apically. Length, 7 mm.

Type.—♀; Field, British Columbia, July 2, 1906, (S. Brown). [A. N. S. P., Type no. 6224]. *Paratypes*.—Females; Grant, Colorado, altitude 9500 to 10,000 feet, July 21 and 22, 1906, (L. O. Jackson).

This species bears a close resemblance to the group containing *lucorum*, but has only three sternopleural bristles. The scutellum

in *lucorum* Fallen, *punctata* Stein, *multisetosa* Schnabl and *brevis* Stein is haired on the sides, and usually also on part of the ventral surface.

***Helina tuberculata* Malloch.**

Female.—Black, densely brownish gray pruinulent. Thorax quadrivittate. Dorsum of abdomen irregularly checkered. Bases of wing-veins yellow; cross-veins narrowly infuscated. Calyptres and halteres orange yellow.

Eyes separated by over one-third of the head-width; parafacial in profile much wider than third antennal joint and half as wide as height of cheek; longest hairs on arista not longer than its basal diameter. Presutural acrostichals absent; postsutural dorso-centrals four; prealar over half as long as the bristle behind it; hypopleura bare; sternopleurals 1.2. Basal abdominal sternite bare. Fore tibia with a strong median posterior bristle; mid tibia with two antero-dorsal and three or four postero-dorsal bristles; hind femur with a few bristles at apex on both antero- and postero-ventral surfaces; hind tibia with from three to five bristles on both antero-ventral and antero-dorsal surfaces. Outer cross-vein curved inward at middle; veins three and four distinctly divergent at apices. Length, 9.5 mm.

Locality.—Lake Louise, Alberta, Canada, July 15, 1908, (Dr. C. S. Minot), [Illinois].

Superficially this species very closely resembles the species of the *lucorum* group but the arista has very much shorter hairs and the hypopleura is bare, while the scutellum has the sides and ventral surface bare, characters which readily separate it from that group. I recently described this form from the male sex, but did not at that time recognize the female of the species.

***Helina nasoni* sp. n.**

Male.—Deep black, almost glossy, with slight grayish pruinulence, most distinct on abdomen when viewed from behind. Thorax distinctly quadrivittate. Abdomen usually with a pair of large, elongate, poorly-defined black spots on segments two and three, the dorsum of all segments irregularly checkered. Legs black. Wings slightly infuscated at bases. Calyptres yellowish white. Halteres yellow.

Eyes sparsely haired, separated at narrowest part of frons by a distance distinctly greater than width across posterior ocelli; orbits linear, not more than one-third as wide as interfrontalia on upper half; antennae shorter than face, third joint slightly broadened apically, at least twice as long as second; arista with the longest hairs as wide as third antennal joint; parafacial in profile at base of antennae about as wide as third antennal joint, slightly narrowed below, at its widest point about half as wide as height of cheek, the latter with numerous marginal bristles, the upper two or three rows much shorter and weaker than the lower one, and distinctly upwardly curved

anteriorly; a few short bristles above level of vibrissa. Thorax without strong presutural acrostichals; postsutural dorso-centrals, four; prealar a little less than half as long as the bristle behind it; sternopleurals 2:2; hypopleura sometimes with a few weak hairs below the spiracle. Abdomen subcylindrical, tapered apically; first sternite with bristly hairs; fifth sternite hairy on entire disc, the hairs stronger and longer on lateral apical angles, postmarginal emargination shallow, rounded. Fore tibia unarmed at middle; fore tarsus longer than tibia; mid femur with two or three long bristles and a series of long hairs on postero-ventral surface, and a series of short hairs on antero-ventral; mid tibia rarely with an antero-dorsal bristle, normally with two postero-dorsal bristles; hind femur with a series of very long strong bristles on entire length of antero-ventral surface, without postero-ventral bristles except at apex; hind tibia with from three to five antero-ventral, and two or three antero-dorsal bristles, and a few setulae on postero-dorsal surface at middle; all claws and pulvilli large. Costal thorns unequal in length, the longest longer than inner cross-vein; outer cross-vein sinuate; veins three and four divergent at apices. Length, 8 to 9 mm.

Type.—♂; Algonquin, Illinois, August 16, 1895, (W. A. Nason), [Illinois]. *Paratypes*.—Males; Fort Wrangel, Alaska, (Wickham); Grand Lake, Newfoundland, July 25 and August 1. Four specimens.

***Helina nigrita* sp. n.**

Male.—Similar to *nasoni* in color.

Differs from *nasoni* in having the third antennal joint much shorter and stouter, the thorax with three pairs of postsutural dorso-centrals, prealar bristle very short or absent, basal abdominal sternite bare, fifth sternite with some strong bristles on each side in line with inner extremity of posterior excision, mid tibia with three very long bristles on the posterior surface and two short ones on the antero-dorsal. Length, 7 mm.

Type.—♂; Monida, Montana, July 27, 1913, [Illinois]. *Paratype*.—1 ♂, topotypical, [Mont. Exper. Sta.].

***Helina neopoeilopectera* nom. nov.**

1918. *Aricia poeciloptera* Malloch [nec Stein], Trans. Amer. Ent. Soc., xliv, p. 271.

I inadvertently created a homonym in my previous paper on this family in this journal, and it is here proposed that the name be changed as above.

***Helina linearis* sp. n.**

Male.—Black, subopaque, densely covered with pale gray pruinescence, appearing gray, the thorax very indistinctly quadrivittate, the abdomen with faint traces of a black dorso-central vitta. Head with the orbits and cheeks covered with dense white, almost silvery, pruinescence; antennae

black; palpi testaceous. Legs yellowish testaceous, coxae largely fuscous, fore femora with a fuscous stripe on postero-dorsal surface, tarsi black. Wings clear. Calyptrae and halteres whitish yellow.

Eyes nude, separated at narrowest part of frons by about three times the width across posterior ocelli; orbits moderately wide, each about half the width of interfrontalia; parafacial in profile about 1.5 as wide as third antennal joint and half as wide as height of cheek, the latter with a series of bristles on margin, above which there are a few weak hairs; antennae shorter than face, third joint narrow, about twice as long as second; arista with the longest hairs distinctly longer than width of third antennal joint. Thorax without strong presutural acrostichals, with three pairs of postsutural dorso-centrals; prealar bristle very small; sternopleurals, three, the posterior lower one much below the upper and distinctly in front of it. Abdomen sub-cylindrical, tapered to apex; first sternite with bristly hairs; fifth sternite with a rather deep posterior excavation, the center of it with a distinct notch. Legs elongate; fore tibia with two minute antero-dorsal setulae, and two strong posterior median bristles; fore tarsus distinctly longer than fore tibia; mid femur with a few long bristles on basal half of postero-ventral surface; mid tibia with one or two antero-dorsal bristles, and a slightly irregular series of four or five on postero-dorsal surface; hind femur with three or four weak bristles on basal half of postero-ventral surface and about six strong bristles on apical half of antero-ventral; hind tibia with from four to six long antero-ventral, three strong antero-dorsal, and, near base, one or two strong postero-dorsal bristles, a number of short setulose hairs on postero-dorsal surface, and some longer setulae on middle of posterior surface. One costal thorn long; outer cross-vein nearly straight; veins three and four distinctly divergent apically. Length, 8 mm.

Type.—♂; Bozeman, Montana, elevation 4800 feet, July 7, 1902, [Illinois].

***Helina spinilamellata* sp. n.**

Male.—Black, densely yellowish gray pruinulent. Head black, frons brownish, parafacials and cheeks slightly velvety; second antennal joint and palpi yellowish. Dorsum of thorax with four narrow fuscous vittae; humeral angles and scutellum yellowish. Abdomen with faintly indicated paired brown dorsal spots, apices of segments yellowish testaceous, that of fourth broadly so. Legs yellowish testaceous, tarsi entirely, fore femora largely fuscous. Cross-veins of wings infuscated. Calyptrae and halteres yellow.

Eyes bare; frons at vertex about one-third as wide as head, wider anteriorly; each orbit with five or six bristles and a few setulose hairs, as is usual in females; ocellar bristles very long; parafacial narrower than third antennal joint and about one-third as wide as height of cheek; arista with its longest hairs not as long as width of third antennal joint; vibrissae very long and strong; proboscis stout. Presutural acrostichals absent; postsutural dorso-centrals, three; prealar minute; hypopleura bare; sternopleurals 1:2. Abdo-

men narrowly ovate; hypopygium small; first sternite bare; fifth deeply cleft, with a group of bristles on a slightly elevated area just caudad of inner extremity of cleft, two or three of the bristles very strong. Fore tibia unarmed; mid tibia with three posterior bristles; hind femur with five or six bristles on apical half of antero-ventral surface; hind tibia with two antero-ventral and two antero-dorsal bristles. Outer cross-vein bent in middle; veins three and four divergent at apices. Length, 5.25 mm.

Type.—♂; Bozeman, Montana, July 17, 1916, [Illinois].

***Helina johnsoni* sp. n.**

Male.—Black, subopaque, covered with dense yellowish pruinescence. Head black, orbits, face, and cheeks with dense silvery pruinescence; second antennal joint brown, its apex and the base of third rufous, remainder of third joint black; palpi brownish black, paler at base. Thorax rather indistinctly quadrivittate. Abdomen with two pairs of faint black dorsal spots. Legs rufous yellow, all coxae grayish, tarsi fuscous. Wings clear, veins yellowish, noticeably so at bases; both cross-veins conspicuously but not broadly infuscated. Calyptrae pale yellow. Halteres yellow.

Eyes with distinct but not dense hairs, separated at narrowest part of frons by a distance about equal to width across posterior ocelli; frons protuberant at base of antennae, where the parafacial is very distinctly wider than third antennal joint; cheek about twice as high as width of parafacial; arista with the longest hairs at least as long as width of third antennal joint. Thorax with four pairs of postsutural dorso-central bristles, and without strong presutural acrostichals; prealar bristle very small; lower anterior sternopleural bristle of moderate length, much longer than in female; hypopleura bare. Abdomen short-ovate; first sternite bare, fifth with a large rounded posterior excavation, the surface bristles of moderate length and slender. Fore tibia with a posterior median bristle; mid tibia with three or four posterior bristles in an irregular series; mid femur with two strong bristles near base on posterior surface; hind femur with about six bristles on apical half of antero-ventral surface, and three or four at apex on postero-ventral; hind tibia with eight or more antero-ventral, two antero-dorsal, and about ten posterior bristles. Costal thorn small; outer cross-vein curved in middle; veins three and four decidedly divergent at apices.

Female.—Similar to the male in color. The head is grayish pruinulent, and the abdomen has rather indistinct dorsal checkerings.

Eyes separated by a little over one-third of the head-width at vertex, and over one-third at base of antennae. Hind tibia with four or five antero-ventral and two antero-dorsal bristles. One costal thorn much longer than in male. Length, 7.5 to 8.5 mm.

Type.—♂; Brookline, Massachusetts, June 18, (C. W. Johnson), [B. S. N. H.]. *Allotype*.—♀; Woodbury, New Jersey, June 7, 1896, (C. W. Johnson). *Paratypes*.—1 ♂, Provincetown, Massachusetts, June 29, 1891; 1 ♀, Auburndale, Massachusetts,

June 16, (C. W. Johnson); 1 ♀, Brookline, Massachusetts, June 28, (C. W. Johnson); 1 ♀, Lyme, Connecticut, May 29, 1910, (A. Champlain); 2 females, Delaware Water Gap, New Jersey, July 11 and 12; 1 ♀, Riverton, New Jersey, June 22, (C. W. Johnson).

Three paratypes are in the collection of Boston Society of Natural History, two in the collection of Illinois Natural History Survey, and one in the collection of The American Entomological Society.

***Helina mimetica* sp. n.**

Female.—Differs from *johnsoni* in having the antennae entirely black, and the cross-veins of the wings broadly infuscated.

Structurally there is no striking difference between this species and *johnsoni*. The lower anterior sternopleural bristle is stronger in the three specimens before me than in *johnsoni*, and the bristles on the tibiae are comparatively stronger. Length, 8.5 to 9 mm.

Type.—♀; Glen House, New Hampshire, June 13, 1916, [B. S. N. H.]. *Paratypes*.—Females; Glen House, New Hampshire, June 14, 1916; North Adams, Massachusetts, June 18, 1906. All taken by C. W. Johnson.

Specimens divided between the three collections mentioned under the preceding species.

***Helina bispinosa* sp. n.**

Male.—Black, densely gray pruinulent. Thorax with three or five black dorsal vittae. Abdomen usually with four black dorsal spots. Legs black, apices of all femora and at least the mid and hind tibiae reddish yellow. Wings clear. Calyptrae white. Halteres yellow.

Eyes bare, separated by width across posterior ocelli, orbits narrow; longest hairs on arista longer than width of third antennal joint; parafacial in profile nearly as wide as third antennal joint, cheek about one-fifth as high as eye. Presutural acrostichals absent; postsutural dorso-centrals four; prealar bristle minute or absent; sternopleurals 2:2. Abdomen subcylindrical, hypopygium protuberant, not very large; fifth sternite with a very conspicuous bristle on each side near base of cleft, and several other bristles near apex of each process. Fore tibia with one posterior bristle; mid femur without antero-ventral bristles; mid tibia with one or two antero-dorsal, two postero-dorsal, one or two postero-ventral bristles; hind femur with six or seven bristles on antero-ventral, and two at middle on postero-ventral surface; hind tibia with one or two antero-ventral and three antero-dorsal bristles, the postero-dorsal surface with a weak bristle basad of middle. Costal thorn long. Length, 6 mm.

Type.—♂; Waukegan, Illinois, August 24, 1917, (J. R. Malloch), [Illinois]. *Paratypes*.—Males; Sidney, Montana, June 13,

1913; Bozeman, Montana, August 3, 1916; Laurel, Montana, July 15.

The Bozeman specimen is deposited in the collection of The American Entomological Society.

***Helina nigribasis* sp. n.**

Male.—Black, subopaque, densely gray pruinose. Head with dense silvery pruinoscence on orbits, face and cheeks; antennae and palpi black. Thorax with four black dorsal vittae. Abdomen with base of first tergite black, the other tergites each with a pair of black spots, those on fourth sometimes indistinct. Legs black, apices of all femora and all of tibiae reddish testaceous. Wings slightly brownish; cross-veins very slightly infuscated. Calyptres white. Halteres yellow.

Eyes almost nude, separated at narrowest part of frons by a distance about equal to width across posterior ocelli; interfrontalia almost obliterated just in front of ocelli; orbits bristled over midway to anterior ocellus; parafacial in profile nearly as wide as third antennal joint, narrowed below; cheek one-fourth as high as eye; longest hairs on arista nearly as long as width of third antennal joint. Presutural acrostichal bristles absent or very small; prealar minute or absent; three pairs of postsutural; dorso-centrals present; sternopleurals 2:2, the lower anterior one weak; hypopleura bare; scutellum without ventral or lateral hairs. Abdomen subcylindrical; basal sternite bare; fifth sternite with a deep central cleft, the surface with a number of stout, moderately long bristles on each side of cleft. Fore tibia with or without a weak median posterior bristle; mid and hind femora each with a few long bristles on basal half of postero-ventral surface, the latter with a complete series on antero-ventral surface; mid tibia with three or four posterior bristles; hind tibia with one or two antero-ventral, three or four antero-dorsal, and three or four postero-dorsal bristles, all short. Third vein bare at base; veins three and four divergent at apices.

Female.—Differs from the male in having the basal abdominal tergite usually with a pair of dark spots, and the mid and hind femora with their apices broadly rufous.

Frons over one-third of the head-width at vertex, slightly wider anteriorly. Fore tibia usually with one or two posterior bristles; mid tibia with an antero-dorsal bristle at or near middle. In other respects as male. Length, 5.5 to 6.5 mm.

Type.—♂; Dongola, Illinois, May 12, 1917. *Allotype*.—♀; topotypical. *Paratypes*.—Dongola, Illinois, May 9, 10 and 12, 1917, and May 12, 1916; Dubois, Illinois, May 24, 1917; Carlinville, Illinois, May 18, (C. Robertson). Thirty-nine specimens.

Type and paratypes in collection of Illinois Natural History Survey, paratypes also are deposited in the collection of The American Entomological Society.

The Dongola and Dubois specimens were taken by Mr. C. A. Hart and the writer, mostly from the leaves and stems of trees.

***Helina constimilata* sp. n.**

Male.—Similar in color to *nigribasis*. Second antennal joint brown.

Differs from the preceding species in having the arista rather shorter haired, fore tibia with two slender bristles on posterior surface beyond middle, hind femur with long hairs on entire length of postero-ventral and ventral surfaces, hind tibia with about eight long slender bristles on antero-ventral surface, one or two antero-dorsal, and two or three postero-dorsal bristles, and the postero-ventral and ventral surfaces with moderately long erect hairs, except basally. Length, 5.5 mm.

Type.—♂; New Bedford, Massachusetts, (Hough), [Illinois].

***Helina spuria* sp. n.**

Male and female.—Very similar to *nigribasis* in color and structure. Differs in both sexes in having the second antennal joint reddish, the cross-veins more distinctly infuscated, the abdominal spots larger, and in the male the abdomen with a rather indistinct dorso-central vitta.

Structurally as *nigribasis*, but the arista with slightly shorter hairs, the lower anterior sternopleural bristle absent, the hind femur has shorter and fewer bristles on the postero-ventral surface, these consisting of two or three short bristles near middle.

The female has the mid and hind femora entirely pale, with a few setulose hairs on the postero-ventral surface of the hind pair.

Length, 6 mm.

Type.—♂; San Luis Obispo, California, April 24, 1919, (E. P. Van Duzee), [California Academy of Sciences]. *Allotype*.—♀; topotypical.

XENOMYDAEA gen. n.

This genus differs from *Aricia* in having the third vein with a few setulae at base, and from *Mydaea* in having the head buccate, very distinctly produced at base of antennae and at vibrissal angle as in figure 29, and the last ventral abdominal segment without strong spines.

Genotype.—*Xenomydaea buccata* sp. n.

***Xenomydaea buccata* sp. n.**

Male and female.—Black, slightly shining, densely brownish gray pruinulent. Head black, frons, face, parafacials and cheeks with silvery pruinescence; antennae and palpi black. Thorax with four fuscous vittae. Abdomen with a very indistinct pair of elongate fuscous spots on each tergite in male, immaculate in female. Legs reddish yellow, femora more or less infuscated, the fore pair usually largely so in both sexes. Wings clear. Calyptrae and halteres yellow.

Male.—Eyes bare; frons at narrowest part about one-sixth as wide as head; parafacial broad, at its narrowest part distinctly wider than third antennal joint, broader at base of antennae and vibrissal angle, the profile concave, vibrissal angle in line with lower margin of eye; cheek nearly twice as high as width of parafacial, its lower margin with a series of bristles and above these some setulose hairs, one of which at anterior end of series is up-curved (fig. 29); longest hairs on arista not longer than its basal diameter. Presutural acrostichals absent; postsutural dorso-ventrals three; prealar bristle about one-third as long as the one behind it; hypopleura bare; sternopleurals 2:2. Abdomen narrowly ovate; hypopygium small; basal sternite bare; fifth with a broad posterior excision, its surface with numerous strong bristles. Fore tibia unarmed at middle; mid femur with an almost complete series of postero-ventral bristles; mid tibia with three or four posterior bristles; hind femur with a complete series of bristles on both antero- and postero-ventral surfaces; hind tibia with two to four antero-ventral and two antero-dorsal bristles, the posterior and postero-dorsal surfaces on their apical half with some short setulae. Third vein with a few setulae at base; veins three and four divergent at apices.

Female.—Differs from the male in having the frons over one-third of the head-width, and the postero-ventral surface of the hind femur without bristles. Length, 7.5 to 8.5 mm.

Type.—♂; Monida, Montana, June 27, 1913, [Illinois]. *Allotype*.—♀; Tennessee Pass, Colorado, July 24, 1917.

EULIMNOPHORA gen. n.

Differs from *Limnophora* in having the basal abdominal sternite with a few setulose hairs, and the prosternum and base of third wing-vein bare.

Genotype.—*Limnophora arcuata* Stein.

Eulimnophora cilifera sp. n.

Male and female.—Black, densely gray pruinulent. Thorax with three rather poorly defined brown vittae. Abdomen of male with basal dorsal segment, except its posterior margin, black, segments two and three each with a pair of large subtriangular black spots; abdomen of female less distinctly marked than that of male, the spots less clearly defined; the larger bristles with their bases surrounded by blackish dots. Legs black, the knees more or less reddish. Wings clear. Calyptrae white. Halteres yellow.

Male.—Eyes separated at narrowest part of frons by about the width of anterior ocellus; third antennal joint rounded at apex, its length over twice that of second; arista with very short pubescence; parafacial in profile almost linear; cheek about as high as width of third antennal joint. Thorax with the presutural hairs four-rowed; four pairs of postsutural dorso-centrals present. Abdomen subovate; basal sternite with a number of hairs on each side; fifth sternite glossy black, with numerous long hairs round margin of

posterior excavation, the basal portion of surface bare. Mid femur with a number of weak bristles on basal half of antero-ventral surface and a series of longer bristles from base to well beyond middle on postero-ventral; mid tibia with one median posterior bristle; hind femur with a rather closely placed series of very short erect bristles from base to apex, the apical two or three much longer than the others; hind tibia with one antero-dorsal and one antero-ventral bristle, the latter usually a little apicad of the former; apical antero-dorsal bristle absent. Wing rather acute at apex, third vein ending in tip, fourth usually slightly curved forward, its apex very noticeably proximad of apex of third.

Female.—Similar to male in chaetotaxy of thorax and bristling of legs. The frons is about one-third as wide as head at vertex, slightly widened anteriorly, with the frontal triangle not extending much beyond middle; the orbits are narrow, each with five or six bristles and a few short hairs.

Length, 3 to 3.75 mm.

Type.—♂; Waukegan, Illinois, August 24, 1917; (J. R. Malloch), [Illinois]. *Allotype*.—♀; Algonquin, Illinois, October 2, 1895, (W. A. Nason). *Paratypes*.—1 ♂, Urbana, Illinois, October 22, 1916, in forestry of the University of Illinois; 2 males Waukegan, Illinois, August 24, 1917; 2 males, without data; 1 ♀, Algonquin, Illinois, September 3, 1894, (W. A. Nason); 1 ♀, Swarthmore, Pennsylvania, October 24, 1910.

The type was taken on the shore of Lake Michigan, but evidently the species is not confined to the vicinity of large bodies of water, as the Urbana specimen was taken a mile or more from the nearest moderately clean body of water.

***Eulimnophora dorsovittata* sp. n.**

Female.—Similar in color to the preceding species, except that the palpi are largely yellowish basally, the apices of femora are more broadly pale and the tibiae more extensively yellowish. The thorax has seven brown vittae, the median one prolonged to apex of scutellum, the submedian pair almost complete, and the lateral two on each side much shorter.

Structurally similar to *arcuata* Stein, the frontal triangle is very long and narrow, conspicuously attenuate just in front of anterior ocellus; the anterior intra-alar bristle is not distinguishable from the discal setulae in type; and the hind femur has only two antero-ventral bristles, near apex. Length, 5.5 mm.

Type.—♀; Kingston, Jamaica, West Indies, April, 1891, (C. W. Johnson), [Illinois].

LISPOIDES gen. n.

This genus is distinguished from its allies by having the hairs continued down on parafacials below level of apex of second antennal joint. The eyes are separated by about the same distance in both sexes.

Genotype.—*Limnophora aequifrons* Stein.

Lispoides aequifrons Stein

1897. *Limnophora aequifrons* Stein, Berl. Ent. Zeitschr., xlii, p. 205.

One male; Swarthmore, Pennsylvania, June 3, 1905.

I have seen this species also from Illinois, New Jersey, and California.

Limnophora groenlandica sp. n.

Female.—Black, covered with dense grayish pruinescence. Frontal triangle brown, opaque; interfrontalia brownish black, opaque; orbits, face, and cheeks white pruinose. Dorsum of thorax with a brown suffusion on greater portion of disc, without clearly defined vittae. Abdomen shining, segments one, two and three each with a large poorly defined subtriangular brown spot on each side on dorsum. Calyptrae white. Halteres yellow.

Structurally similar to *discreta* Stein, differing as follows: Frontal triangle shorter and broader; arista shorter, the basal swelling more elongate, and the pubescence much shorter; parafacial in profile broader, at least as wide as third antennal joint; cheeks with more numerous short hairs; mid tibia with an antero-dorsal bristle; hind tibia with a weak antero-dorsal bristle apical of the strong one. Length, 4 mm.

Type.—♀; West Coast of Greenland, 1891, (Mengel and Hughes, on the Peary Expedition), [A. N. S. P., Type no. 6234].

Limnophora velutina n. n.

1913. *Parlimnophora brunneisquama* Malloch [nec Strobl], Proc. U. S. Nat. Mus., xlv, p. 605.

This species was originally placed in a genus which I considered distinct from *Limnophora*, and which is distinct from my present concept of that genus, but there is another species which does not belong to the genus *Limnophora* in the restricted sense, which has the same specific name, and it thus appears necessary to change the name of the American one as above.

The species occurs in the northeastern states and in Newfoundland.

The apex of the hind tibia and hypopygial forceps and fifth sternite are represented in figures 12, 21 and 22.

Limnophora acuticornis sp. n.

Male.—Black, faintly shining, covered with dense gray pruinescence. Head entirely black, frons, face and cheeks with dense silvery pruinescence. Thorax with a distinct narrow central vitta and a broader less distinct one on each side of it. Abdomen with a narrow fuscous or dark brown dorso-central interrupted vitta, basal segment (second) indistinctly brownish on dorsum, the next two segments each with a large subtriangular brownish-

black spot on each side of dorsum. Legs black. Wings slightly grayish. Calyptrae white. Halteres yellow.

Frons at vertex nearly one-third as wide as head, slightly narrowed at center, where it is over twice as wide as the distance across posterior ocelli; orbits almost linear, each with four to five bristles and a few weak hairs, the bristles all incurved; face slightly convex in profile, the frons, at base of antennae, produced a little further than vertical line of vibrissal angle; antennae elongate, the third joint acutely pointed at apex on upper side; arista with the longest hairs about equal in length to basal diameter of arista; parafacial in profile broader than third antennal joint, its width equal to two-thirds the height of cheek, the latter about one-fifth as high as eye, its margin with a series of moderately strong bristles and above these a few weak hairs, the hairs above vibrissa few and weak. Thorax with three pairs of postsutural dorso-central bristles; presutural acrostichals two-rowed just in front of suture; preapical scutellars absent; sternopleurals 1:2. Fore tibia unarmed at middle; mid tibia with one antero-dorsal and two postero-dorsal bristles; hind femur with a series of rather long hair-like bristles on basal half of postero-ventral surface, the antero-ventral surface with three to five strong bristles on apical half; hind tibia with two antero-dorsal and two antero-ventral bristles, and one or two weak postero-dorsal setulae. Third vein bare at base; veins three and four subparallel apically; apex of wing almost midway between veins three and four.

Female.—Differs from the male in being darker colored, with the frons less distinctly pruinulent, and the abdominal markings less distinct.

The frons is slightly over one-third of the head-width, and the orbital hairs are more numerous than in the male. The body is ovate and the genitalia without curved apical thorns.

Length, male, 5 mm.; female, 5 to 6 mm.

Type.—♂; Swarthmore, Pennsylvania, August, 1908, [A. N. S. P., Type no. 6225]. *Allotype*.—♀; Swarthmore, Pennsylvania, June 26, 1910, along shady creek, (E. T. Cresson, Jr.). *Paratypes*.—2 females; Swarthmore, Pennsylvania, July, 1908; Jack Run, Allegheny, Pennsylvania, June 14, 1908.

The widely separated eyes of the male, and the acute angle of third antennal joint will separate this species readily from any so far described from North America.

***Limnophora brevicornis* Malloch**

1917. *Tetramerinx brevicornis* Malloch, Can. Ent., L, p. 226. (Female.)

I had only females of this species at the time when I wrote the specific description, and, as that sex of the species agrees very closely with those of the genotype of *Tetramerinx*, I erroneously placed it in that genus.

The male differs from typical species placed in *Limnophora* less conspicuously than does *aequifrons* Stein or *arcuata* Stein, and until it is possible for some one to revise the group thoroughly I consider it advisable to leave the species in *Limnophora*, the more so as I do not clearly understand the subdivisions of the genus proposed by recent European authors.

I append a brief description of the male of *brevicornis*.

Male.—Color as in female, grayish white, basal dorsal segment of abdomen black on a large portion of disc, second segment with a pair of large subtriangular black spots, third segment with a pair of small blackish spots which are at times indistinct. Orbits, face and cheeks silvery.

Eyes separated by a little more than width across posterior ocelli, orbits almost or quite obliterating interfrontalia, each with five or six bristles along inner margin, otherwise bare. Acrostichals two-rowed. Hind femur with long slender bristles on basal half of posterior surface, postero-ventral surface bare. Otherwise as female. Length, 4 mm.

Allotype.—♂; Waukegan, Illinois, August 24, 1917, (J. R. Malloch), [Illinois]. Three other specimens with same data.

The species occurred on the bare sand on the shore of Lake Michigan.

***Limnophora argentiventris* sp. n.**

Male.—Differs from the preceding species in having the ocellar triangle black and the abdomen silvery, with smaller black dorsal spots.

Structurally similar to *brevicornis*, but cheek slightly higher than width of parafrontal at base of antennae. In addition to the elongated fourth tergite this species differs from *brevicornis* in having the basal portion of hypopygium with a long bristle on each side close to central cleft, all sternites with more numerous hairs, the fifth distinctly produced at apex of each process, and the hind femur with a few slender bristles at base on postero-ventral surface and without the posterior bristles. Length, 3.5 mm.

Type.—♂; Gallatin County, Montana, August 23, 1917, [Mont. Exp. Sta.].

***Limnophora obsoleta* sp. n.**

Male.—Black, subopaque, the abdomen slightly shining. Orbits, face and cheeks with silvery gray pruinescence. Thorax with slight gray pruinescence, which is most distinct on lateral margins and on the narrow vittae on each side of the median line on disc. Abdomen almost entirely black, the posterior margins of the tergites brownish, the dorsal spots indistinguishable. Legs entirely black. Wings slightly and evenly browned, veins thick, dark brown. Calyptrae obscurely yellowish. Halteres pale brown.

Eyes bare, separated at narrowest part of frons by a distance about 1.5 as great as width across posterior ocelli, the interfrontalia as wide as one

orbit, the latter with long bristly hairs on their entire length; parafacial in profile at base of antenna a little wider than third antennal joint, narrowed below; vibrissal angle with its anterior extremity in line with base of antennae, the face a little concave; third antennal joint subequal in length to second; arista bare, much thickened on a little less than its basal third; cheek about one-fourth as high as eye (fig. 30). Thorax with numerous long hairs, the dorso-centrals weak, four pairs behind suture. Abdomen elongate, almost cylindrical; hypopygium small. Fore tibia unarmed at middle; mid femur with a few bristles on basal half of postero-ventral surface; mid tibia with or without one or more antero-dorsal bristles, with one or two postero-dorsal and postero-ventral bristles; hind femur with a series of bristles on antero-ventral surface, which are weak basally, and a few bristles on basal half of postero-ventral; hind tibia with a variable number of weak bristles, usually from one to three on antero-ventral and antero-dorsal surfaces, and sometimes with a few setulae on postero-dorsal surface; hind tarsus distinctly longer than tibia. Costal setulae longer than diameter of costal vein on basal half of wing; veins three and four subparallel. Calyptrae small, the lower one not very much larger than the upper.

Female.—Similar in general color to the male, but more brownish and the thoracic dorsum with four more distinct vittae.

Eyes separated by more than one-third of the head-width; orbits wide, each over half as wide as interfrontalia, with numerous bristly hairs laterad of the bristles. Abdomen ovate; genitalia without thorns. Costal setulae longer than in male. Length, 4 to 5 mm.

Type.—♂; West Coast of Greenland, 1891, (Mengel and Hughes, on the Peary Expedition), [A. N. S. P., Type no. 6226].
Allotype and *paratypes*.—Nine specimens, topotypical.

***Limnophora extensa* sp. n.**

Male.—Differs from *obsoleta* in having the pruinescence gray, the abdomen with large paired dorsal black spots, and the calyptrae white.

Profile as in figure 32. Eyes separated by less than width between posterior ocelli. Thoracic chaetotaxy as in *obsoleta*, the surface hairs longer. Abdomen broader than in *obsoleta*, the hypopygium and fifth sternite as in figures 23 and 24. Legs with stronger bristles than in *obsoleta*, fore tibia with a few long bristly hairs on posterior surface; mid tibia with two antero- and postero-dorsal bristles; hind femur with a series of antero-ventral bristles and a few short bristly hairs on basal half of postero-ventral surface; hind tibia with two antero-ventral, two or three antero-dorsal and two or three postero-dorsal bristles. Costal setulae short but distinct; fourth vein curved downward at apex. Lower calyptra much larger than upper.

Female.—Differs from the female of *obsoleta* in having the vibrissal angle much produced, the costal setulae short, and the lower calyptra much longer than the upper.

Length, 4.5 to 6 mm.

Type.—♂; West Coast of Greenland, 1891, (Mengel and Hughes, on the Peary Expedition), [A. N. S. P., Type no. 6227].
Allotype and *paratypes*.—Eight specimens, topotypical.

***Limnophora angulata* sp. n.**

Male.—Color as in *extensa*.

Differs from *extensa* in being larger, in having the hairs on body and legs longer, the bristles on mid and hind femora longer and more numerous, the hypopygium larger (fig. 25), and the incision in fifth sternite deeper (fig. 26).

Female.—Larger than the female of *extensa*, with the vibrissal angle less produced (fig. 38), and the mid and hind femora more conspicuously bristled.

Length, 6 to 7.5 mm.

Type.—♂; West Coast of Greenland, 1891, (Mengel and Hughes, on the Peary Expedition), [A. N. S. P., Type no. 6228].
Allotype and *paratypes*.—Three specimens, topotypical.

***Limnophora pearyi* sp. n.**

Male.—Similar to *extensa* in color, the wings darker and the spots on abdomen more distinctly separated in middle.

Eyes separated by width across posterior ocelli; vibrissal angle less produced than in *extensa* (fig. 35). Abdomen cylindrical, incision in fifth sternite wedge-shaped. Armature of legs as in *extensa*, but the hind femur has the antero-ventral bristles confined to apical half and the postero-ventral surface with very few weak bristly hairs on basal third.

Female.—Similar to the female of *extensa*, but the vibrissal angle less produced, and the hind femur as in male, except that the postero-ventral surface is bare.

Length, 4.5 to 5.5 mm.

Type.—♂; West Coast of Greenland, 1891, (Mengel and Hughes, on the Peary Expedition), [A. N. S. P., Type no. 6229].
Allotype and *paratype*.—Two specimens, topotypical.

***Limnophora novae-angliae* sp. n.**

Male.—Deep black, shining. Dorsum of thorax slightly gray pruinulent, that of abdomen, except on the spots, densely so. Basal tergite entirely black, second with two very large subquadrate black spots, third with a pair of smaller subtriangular spots, both pairs narrowly separated, fourth with a poorly-defined central spot. Wings grayish, slightly infuscated at bases and on cross-veins. Calyptres and halteres yellow.

Eyes separated by twice the width across posterior ocelli; orbits linear; parafacials nearly as wide as third antennal joint; cheek about three times as high as width of parafacial; setulae continued about one-third of the way from vibrissa to base of antenna; third antennal joint angulated at apex

above; arista almost bare. Thorax with four pairs of postsutural dorso-centrals. Abdomen narrowly ovate; fifth sternite with a deep wedge-shaped posterior incision, which is transverse at base, the surface with numerous small setulae adjacent to basal half of incision, and a few long bristly hairs apically. Fore tarsus much longer than tibia; mid femur with some long bristles on basal half of postero-ventral surface; mid tibia without antero-dorsal bristles; hind femur with a series of bristles on antero-ventral surface, those on apical half strong, and long bristly hairs on basal half of postero-ventral surface; hind tibia with two or three antero-ventral, three or more antero-dorsal, and two or three postero-dorsal bristles, the latter short.

Female.—Much paler than male, the thorax with three indistinct brown vittae, the abdominal spots brown.

Eyes separated by one-third of the head-width, frons widened anteriorly. In other respects as male.

Length, 6 mm.

Type.—♂; Mt. Washington, New Hampshire, 4000 feet, July 4, (C. W. Johnson), [B. S. N. H.]. *Allotype*.—♀; Base Station, Mt. Washington, New Hampshire, August 14, 1916, (C. W. Johnson). *Paratypes*.—♂ and ♀; Nain, Labrador, August 18.

***Limnophora monticola* sp. n.**

Male.—Similar to the preceding in color, the wings brownish along veins.

Differs from *novae-angliae* in having the eyes separated by width across posterior ocelli, the incision in fifth sternite not so deep and the hind femur with only three or four strong antero-ventral bristles on apical third, the remainder of that surface unarmed, and the postero-ventral surface without long bristly hairs on basal half. Length, 6 mm.

Type.—♂; Mt. Washington, New Hampshire, July 8, 1914, (C. W. Johnson), [B. S. N. H.].

***Limnophora gibsoni* sp. n.**

Male.—Similar to *monticola* in color, the wings conspicuously infuscated, especially basally.

Eyes separated by less than width across posterior ocelli; hind femur with more numerous bristles on antero-ventral surface, and with some short setulae on middle of postero-ventral surface; inner cross-vein a little before apex of first vein, the penultimate section of fourth vein nearly half as long as ultimate; in *monticola* the inner cross-vein is just beyond apex of first, and the penultimate section of fourth is one-third or a little over one-third as long as ultimate. Length, 6.5 mm.

Type.—♂; Youghall, New Brunswick, Canada, July 3, 1908, (A. Gibson), [Can. Nat. Coll.].

***Limnophora tetrachaeta* sp. n.**

Male.—Shining black. Thorax with faint pruinescence. Abdomen with dense brownish gray pruinescence, a fine dorso-central black vitta between the black paired spots. Wings slightly grayish. Calyptrae obscurely yellow. Halteres black.

Eyes separated by almost twice the width across posterior ocelli; orbits narrow, strongly bristled nearly to anterior ocellus; parafacial not as wide as third antennal joint, slightly narrowed below; cheek about twice as high as width of parafacial; setulae continued above vibrissae about one-third of the way to base of antennae; arista pubescent. Pre-sutural acrostichals strong, irregularly two-rowed; postsutural dorso-centrals four. Abdomen narrowly ovate, thick; fifth sternite and hypopygium as in figures 19 and 20. Legs stout; fore tarsus longer than tibia, the latter with a median posterior bristle; mid femur with a number of short bristles on basal half of antero-ventral surface and some longer bristles on basal half of postero-ventral; mid tibia with at least one antero-dorsal bristle, the postero-dorsal and posterior surfaces with one or two bristles each; hind femur with a complete series of antero-ventral bristles, and some shorter bristles on basal half of postero-ventral; hind tibia with two antero-ventral, two antero-dorsal and two or three postero-dorsal bristles, the latter very short. Length, 5 mm.

Type.—♂; Blitzen River, Oregon, July 6, 1906, [Illinois].

Paratypes.—1 ♂, topotypical; 1 ♂, Bozeman, Montana, July 23, 1915.

There is a female specimen in my material which appears to belong to this species. It has the frons one-third of the head-width, each orbit with five strong bristles and a few short setulose hairs, the abdomen shining, without distinct spots, the fore tibia with an antero-dorsal bristle at middle, and the hind femur with three long bristles at base on postero-ventral surface. The costal thorn is much longer than in the male, and the last section of fourth vein is less than twice as long as preceding section, while in the male it is over twice as long. Locality, Mystic Lake, Montana, July 24, 1902.

***Limnophora alticola* sp. n.**

Male.—Differs from *caroli* in having the thorax much deeper black, without distinct markings. The abdomen is similarly marked to that of *caroli*, the space between the dorsal spots being more or less filled in with brownish or fuscous.

Eyes separated by width across posterior ocelli; interfrontalia almost obliterated in front of ocelli; profile almost as in *obsoleta* (fig. 33). Chaetotaxy of thorax and legs as in *caroli*. Incision of fifth sternite not so clearly wedge-shaped as in *caroli*, the base of the incision truncated.

Female.—Differs from the male in having the thorax with three brown vittae.

Eyes separated by a little less than one-third of the head-width at vertex, widened anteriorly. Abdomen broad, tapered posteriorly. Length, 4 to 5 mm.

Type.—♂; Glen House, New Hampshire, August 3, 1914, (C. W. Johnson), [B. S. N. H.]. *Allotype*.—♀; Mt. Washington, New Hampshire, no other data. *Paratypes*.—Mt. Washington, New Hampshire, two males, July 28, 1915, one male, August 16, 1915; Mt. Monadnock, New Hampshire, June 26, 1917; one male, Princeton, Maine, July 12; Nain, Labrador, one male, August 18; Mountains east of Codroy, Newfoundland, three males, one female, July 19 to 22, 1905; Lewisport, Newfoundland, one male, July to August, 1905.

All except the last specimen were sent to me by Mr. C. W. Johnson from the collection of Boston Society of Natural History, the last specimen belongs to the American Museum of Natural History, New York.

***Limnophora suspecta* sp. n.**

Male.—Very similar to *alticola* but much paler in color. Thorax and abdomen densely pale gray pruinulent. Tibiae rufous. Wings yellowish, veins pale, yellow basally.

Structurally similar to *alticola*, the eyes rather more widely separated, and the hind femora less strongly bristled, especially on the postero-ventral surface. Length, 4.5 to 5.5 mm.

Type.—♂; Capens, Maine, August 19, [B. S. N. H.]. *Paratype*.—♂; Mt. Ascutney, Vermont, July 11, 1908. Collected by C. W. Johnson.

***Limnophora caroli* sp. n.**

Male.—Black, subopaque, densely gray pruinulent. Interfrontalia opaque black when viewed from above; orbits, face, and cheeks with white pruinescence. Dorsum of thorax with three brown vittae, the outer one on each side broadened at and beyond suture, all three ceasing before posterior margin; scutellum with a large brown mark on each side of disc. Abdomen with a large subquadrate black dorsal spot on basal segment, which is paler centrally, a pair of large black spots on second and third segments, each pair connected centrally by a brown spot, and a brown spot in center of fourth segment. Legs pitchy black. Wings slightly brownish. Calyptrae white. Halteres yellow.

Eyes separated by almost one-third of the head-width; frons a little widened anteriorly; each orbit about one-fourth as wide as interfrontalia, with six

or seven bristles, laterad of which there are some hairs in a vertical series; frons slightly buccate, width of parafacial at base of antennae about equal to that of third antennal joint, much narrowed below; a few setulae above vibrissa. Acrostichals in about four irregular rows; postsuturals three; sternopleurals 1:2. Abdomen subovate; fifth sternite with a deep V-shaped notch. Legs slender; hind tarsi longer than tibia; fore tibia with or without median bristle; mid tibia with one or two antero-dorsal and postero-dorsal bristles; hind femur with a few slender posterior bristles on basal half, and four or five bristles on apical half of antero-ventral surface. Veins three and four subparallel apically, the former ending close to wing tip, the latter much behind it. Length, 4.75 mm.

Type.—♂; Mt. Ascutney, Vermont, July 11, 1908, (C. W. Johnson), [B. S. N. H.]. One specimen.

The peculiar abdominal markings and very widely separated eyes serve to separate this species from any known to me from this country or Europe.

Named in honor of the collector of the type.

***Limnophora clivicola* sp. n.**

Male.—Black, slightly shining, the surface with dense gray pruinescence. Head entirely black, orbits, face, and cheeks with white, almost silvery pruinescence. Anterior half of thoracic dorsum shining brownish black, the sides and posterior half gray pruinose. Abdomen with basal half of first visible tergite, a pair of elongate poorly defined spots on next two tergites and a central spot on apical tergite, black, the second and third segments each with a very faintly indicated central vitta between the spots in most specimens. Legs black. Wings clear, slightly brownish apically; veins pale at bases. Calyptae and halteres yellowish.

Eyes almost bare, separated by about as great a distance as width across posterior ocelli; interfrontalia almost obliterated at middle; antennae extending about two-thirds of the distance to mouth-margin; arista with its longest hairs a little longer than its basal diameter; parafacial in profile linear; cheek a little higher than width of third antennal joint, with moderately long bristles along lower margin; a few short bristles above vibrissa (fig. 36). Presutural acrostichals weak, four-rowed; postsutural dorso-centrals, three; prealar absent; lower posterior sternopleural very weak. Fore tibia unarmed at middle and without apical posterior bristle; mid femur with a few bristles on basal half of postero-ventral surface; mid tibia with or without a weak antero-dorsal bristle, the postero-dorsal surface with two or three bristles; hind femur with five or six bristles on apical half of antero-ventral surface, the basal half of posterior surface with setulose hairs, postero-ventral surface bare; hind tibia with two antero-ventral and two antero-dorsal bristles, apical antero-dorsal bristle weak; mid and hind tibiae longer than their tibiae; pulvilli slightly longer than claws. Outer cross-vein slightly curved, inner proximad of apex of first vein; veins three and four divergent apically; costal thorn very small.

Female.—Differs from the male in color in having the thorax with a broad brownish black vitta on each side of dorsum, which does not extend beyond middle posteriorly, and usually also a narrow central vitta; abdomen with five blackish spots as in male, the other markings absent.

Frons at vertex less than one-third of the head-width, much wider anteriorly; orbits narrow, with a few hairs laterad of the bristles; ocellar triangle narrow, poorly defined, shining in part, not extending to anterior margin. Bristles on tibiae rather variable in number, the fore tibia sometimes unarmed at middle and sometimes with one or two bristles on posterior surface.

Length, 6 to 7 mm.

Type.—♂; Makanda, Illinois, June 4, 1919, [Illinois]. *Allotype*.—♀; topotypical. *Paratypes*.—Two males, Makanda, Illinois, June 5, 1919; one male, one female, Alto Pass, Illinois, June 6, 1919; one male, Chester, Massachusetts, August 5, 1911; one female, Cornish, New Hampshire, July 13 (C. W. Johnson). The Illinois specimens were taken by the writer and C. P. Alexander.

This species in Illinois was found at rest on vertical rock surfaces.

Related to *torreyae* Johannsen, from which it readily may be separated by the form of the head in both sexes, the profile differing as shown in figures 36 and 39 in the males, the frons in females of *torreyae* being entirely opaque.

***Trichopticus coquilletti* sp. n.**

Male.—Black, shining, the dorsum of abdomen with drab-gray pruinescence except on a narrow central vitta. Wings slightly browned. Calyptrae yellow. Knobs of halteres black.

Eyes with dense long hairs; frons about as wide as anterior ocellus; arista pubescent. Thorax without presutural acrostichals; postsutural dorso-centrals, four pairs; prealar not developed. Abdomen cylindrical, slightly tapered apically. Apical joint of fore tarsus more distinctly laterally compressed than in *hirsutula*, the dorsal ridge higher; preapical joint with two or three strong bristles at apex; mid femur with a series of bristles on basal half of postero-ventral surface, which are directed apicad and lie rather close to surface, the last bristle in series much stronger than the others; mid tarsus broadened apically, the fourth joint broader than long; mid tibia with three or four posterior bristles; hind femur with soft, erect hairs on posterior surface, and a series of bristles on apical half of antero-ventral surface; hind tibia slightly curved, with a long, stout, blunt spur consisting of three or four closely fused bristles at apex of ventral surface, antero-dorsal and antero-ventral surfaces with erect fine hairs, the length of which does not exceed diameter of tibia, postero-dorsal surface with a long bristle about one-fourth from apex, preapical dorsal bristle short. Venation normal. Length, 6.5 mm.

Type.—♂; Popoff Island, Alaska, July 13, 1899, (Kincaid), [U. S. N. M.].

This is the species recorded by Coquillett as *Lasiops hirsutula* Zetterstedt, in the report on the Diptera collected by the Harri-man Alaska Expedition.¹

From *coquilletti*, *hirsutula* differs in having the prealar bristle long; mid femur with a series of short stout spines on basal half of ventral surface instead of very weak hairs; the hind tibia with two or three postero-dorsal bristles, the antero-ventral hairs much longer than the diameter of the tibia and the posterior surface with long hairs, and the fourth joint of mid tarsus much longer than broad.

***Trichopticus conformis* sp. n.**

Male.—Black, slightly shining, thorax and abdomen with dense golden brown pruinescence, the former with two narrow submedian, and two broad sublateral black vittae, the abdomen with a narrow black dorso-central vitta, which is slightly dilated at apex of each segment. Antennae and palpi black. Legs yellow testaceous, the coxae, trochanters, fore femora and tarsi infuscated. Wings hyaline, yellow at bases. Calyptrae and halteres yellow.

Eyes hairy, separated by about width of anterior ocellus; parafacials about half as wide as third antennal joint and half as wide as height of cheek; antennae elongate, extending almost to mouth-margin, third joint twice as long as second; arista with longest hairs not longer than its basal diameter. Thorax with two strong pairs of presutural acrostichals and four pairs of postsutural dorso-centrals; prealar bristle more than half as long as the one behind it. Abdomen broadly ovate; hypopygium as in figures 9 and 10; fifth sternite with rather dense setulose hairs on disc, the posterior margin with a broad, shallow, rounded emargination (fig. 11). Fore tibia with from one to three posterior bristles; fore tarsus normal, longer than tibia; mid femur normal in shape; mid tibia with one or two antero-dorsal, two or three postero-dorsal and two or three postero-ventral bristles; hind femur with a series of bristles from base to apex, which increase in length to near apex and then decrease; the ventral surface with numerous erect short hairs; hind tibia with from five to eight antero-ventral setulae, the anterior and antero-dorsal surfaces with erect short hairs, among which, on the latter surface, are two or three longer bristles, the postero-dorsal surface with a long median bristle, and a few erect hairs on the posterior surface. Costal thorn minute; outer cross-vein slightly curved.

Female.—Similar in color to male.

Eyes separated by one-third of the head-width; interfrontalia without cruciate bristles; lower, forwardly directed, supraorbital bristle much longer and stronger than second. Armature of fore and mid tibia as in male; hind

¹Proc. Wash. Acad. Sci., ii, p. 444.

femur with four or five strong bristles on apical half of antero-ventral surface; hind tibia with one postero-dorsal, two or three antero-dorsal and two or three antero-ventral bristles. Wings more rounded than in male; outer cross-vein nearly straight.

Length, 7 to 7.5 mm.

Type.—♂; Mt. St. Piran, Alberta, Canada, no date, (H. Skinner), [A. N. S. P.]. *Allotype*.—♀; Base Station, Mt. Washington, New Hampshire, August 15, 1916, (C. W. Johnson). *Paratypes*.—Boisdale, Cape Breton, Nova Scotia, July 18 to 19, one male; Spruce Brook, Newfoundland, August 8 to 12, two males; Youghall, New Brunswick, Canada, July 4 to 7, 1908, (A. Gibson), four males and two females; Mt. Washington, New Hampshire, one male; White Mountains, New Hampshire, (Scudder), one female; Fallen Leaf, Lake Tahoe, California, June 15, 1916, (H. G. Dyar), one male; Kokanee Mt., British Columbia, August 10, 1903, (H. G. Dyar), one female; South Fork Creek, British Columbia, August 11, 1903, (H. G. Dyar), one male; Lillooet, British Columbia, September 6, 1918, one male.

***Trichopticus latipennis* sp. n.**

Male and female.—Similar in general color to the preceding species. Fore femora entirely pale, base of third antennal joint and apex of second narrowly reddish, thorax and abdomen more distinctly shining than in *conformis* and with grayish instead of brassy yellow pruinescence.

Male.—Head as in *conformis* but the cheek has fewer and stronger marginal bristles. Thorax with two pairs of very weak presutural acrostichals. Abdomen more elongate than in *conformis*, and less pointed at apex. Fore tibia unarmed at middle; mid femur with a few strong bristles on basal half of antero-ventral surface and some weak hairs on basal half of postero-ventral; mid tibia with two or three posterior bristles and a few weak postero-ventral setulae; hind femur with a series of bristles on antero-ventral surface which are shortest in middle, and a few bristles on apical third of postero-ventral surface; hind tibia with one postero-dorsal and two antero-dorsal bristles, the antero- and postero-ventral surfaces with long bristly hairs, which are longest at middle.

Female.—Frons as in *conformis*, cheek narrower than in that species, but little higher than width of parafacial. In other respects as in the male, except that the hind tibia lacks the bristly hairs.

Length, 7 mm.

Type.—♂; Mt. Equinox, Vermont, June 5, 1910. *Allotype*.—♀; Bretton Woods, New Hampshire, June 24, 1913. *Paratypes*.—North Adams, Massachusetts, June 18, 1906; Great Barrington, Massachusetts, June 16, 1915; Capens, Maine, July 17, 1907. All taken by C. W. Johnson.

Type and allotype in collection of Boston Society of Natural History, paratypes in collections of Illinois Natural History Survey and of The American Entomological Society.

Trichopticus diffinis sp. n.

Male.—Similar in color to *spiniger*, but the halteres are yellow.

Differs from *spiniger* in being smaller, and in having the mid femora with a number of long hairs on basal half of postero-ventral surface. The mid tarsus has the fringe of fine hair on postero-ventral margin of joints three to five much weaker than in the two preceding species. The mid tibia in the type has only one posterior bristle, the hind femur has from five to seven strong bristles on apical half of antero-ventral surface. In other respects as in *spiniger*, but the fourth joint of mid tarsus is shorter. Length, 4.25 mm.

Type.—♂; Emigration Canyon, Utah, July 21, 1917, [Coll. Aldrich].

Trichopticus melanderi sp. n.

Male.—Similar in color to *spiniger*, differing only in having the knobs of the halteres yellow.

Eyes almost bare, separated by about the width across posterior ocelli; lower supraorbital bristle proclinate; face concave in profile, the mouth-margin almost in line with base of antennae; cheek over twice as high as width of parafacial, the latter nearly as wide as third antennal joint; antennae not as long as face, third joint nearly twice as long as second; longest hairs on arista a little longer than its basal diameter. Presutural acrostichals hair-like, irregularly four-rowed; postsutural dorso-centrals, three. Abdomen cylindrical, tapered; hypopygial forceps long, slightly knobbed at apices. Fore tibia with hairs on posterior surface longer than elsewhere, and usually with one weak posterior median bristle; fore tarsus distinctly longer than fore tibia; mid femur normal, with slender bristles on postero-ventral surface; mid tibia with one antero-ventral, one or two antero-dorsal, two or three postero-dorsal, and one or two postero-ventral bristles; mid tarsus normal; hind femur with a series of bristles from base to apex on antero-ventral surface, and a much weaker series on apical half of postero-ventral surface; hind tibia almost straight, with from four to six antero-ventral, two or three antero-dorsal, and four to six postero-dorsal bristles, the posterior surface with a few long hairs on middle. Costal thorn small; apex of wing rounded.

Female.—Less intensely black than male, but not so densely gray pruinulent as *spiniger*.

Frons about one-third as wide as head; lower supraorbital not much longer than second; interfrontalia without cruciate bristles. Fore and mid tibiae as in male; hind femur with fewer bristles on antero-ventral surface and none on postero-ventral; hind tibia as in male except that the postero-dorsal surface has only one strong bristle and the posterior surface has no long hairs.

Length, 4 to 4.5 mm.

Type.—♂; Paradise Park, Mt. Rainier, Washington, August, 1917, (A. L. Melander). *Allotype*.—♀; topotypical. *Paratypes*.—Seven males and one female, topotypical; one male, one female, Tuolumne Meadows, California, 9000 feet, August 16, 1916, (G. R. Pilate).

This is the smallest species of the genus I have seen.

The type and allotype are in Professor Melander's collection; the paratypes are placed in the collections of the Academy of Natural Sciences of Philadelphia, the Illinois State Natural History Survey, U. S. National Museum, and that of Dr. Aldrich.

***Trichopticus johnsoni* sp. n.**

Male.—Glossy, bluish black, thorax faintly white pruinose, with slight indications of four vittae, abdomen with a faint black dorso-central vitta. Legs black, tips of femora and extreme bases of tibiae slightly reddish. Wings at bases, calyptae and halteres bright orange-yellow.

Eyes with long sparse hairs, separated by a little more than width of anterior ocellus; mouth-margin protuberant; parafacial as wide as third antennal joint; arista with very short pubescence. Thorax without strong presutural acrostichals; four pairs of postsutural dorso-centrals present. Abdomen subovate; hypopygium of average size; fifth sternite normal. Fore tibia unarmed at middle; mid femur elongated, with a group of short blunt bristles on apical third of antero-ventral and ventral surfaces, and eight very long bristles on postero-ventral; hind femur slender, distinctly longer than abdomen, curved, its antero-ventral surface with a series of bristles from before middle to apex; hind tibia much curved, with a series of moderately long setulose hairs from near base to apex on antero-ventral surface, two or three antero-dorsal bristles, two or three postero-dorsal bristles, a series of long erect hairs on apical half of posterior surface, and dense erect setulose hairs on apical half of ventral surface. Costal thorn minute; wing slightly pointed.

Female.—Similar in color to the male.

Eyes very indistinctly hairy; frons one-third as wide as head; interfrontalia without cruciate bristles. Abdomen more pointed than in male. Mid femur with a series of hair-like bristles on postero-ventral surface, and two strong bristles beyond middle on antero-ventral; mid tibia with one or two antero-dorsal and two or three postero-dorsal bristles; hind femur not curved, with fewer and stronger bristles than male; hind tibia slightly curved, with three to five antero-ventral, two or three antero-dorsal and two or three postero-dorsal bristles.

Length, 7 to 8.25 mm.

Type.—♂; North Adams, Massachusetts, June 18, 1906, (C. W. Johnson). *Allotype*.—♀; Glen House, New Hampshire, August 3, 1914. *Paratypes*.—Topotypical with type, one male;

Mt. Washington, New Hampshire, elevation 2500 feet, August 16, 1915, (C. W. Johnson), one female; Douglas, Alaska, (E. Jenne), two females; Franconia, New Hampshire, (Morrison), one male.

The type and allotype are in the collection of the Boston Society of Natural History; one paratype is in the collection of the Illinois Natural History Survey; one paratype is in the collection of the Academy of Natural Sciences of Philadelphia; the two from Alaska are in the collection of A. L. Melander, and the last is in the U. S. National Museum.

Trichopticus brevitarsis sp. n.

Male.—Similar in color to *melanderi*, the halteres black.

Structurally this species closely resembles *villicrurus*, and the armature of the legs is similar, but the tarsi are much shorter, the arista is longer haired, the bristly hairs on ventral surface of mid femur are shorter than the diameter of femur, except in postero-ventral series, the long hairs on posterior surface of hind tibia are confined to basal half, and the species is much smaller, being only 4 mm. in length, as against 5.5 mm. in *villicrurus*.

Type.—♂; Paradise Park, Mt. Rainier, Washington, August, 1917, (A. L. Melander), [Coll. Melander]. *Paratypes*.—Two males, London Hill Mine, Bear Lake, British Columbia, 7000 feet, July 21 and 28, 1903, (R. P. Currie); two males, Kokanee Mt., British Columbia, 8000 feet, August 18, 1903, (R. P. Currie).

POGONOMYIODES Malloch

I erected this genus for the reception of a species, the male of which I describe in the present paper. The species was originally represented by one female only. In the present collection there is a male and two females. The genus is closely allied to *Eriphia*, but the male lacks the very conspicuous bristles on apex of fourth tergite and whole of fifth, the abdomen not presenting the blunt appearance of *Eriphia*.

Pogonomyiodes atrata Malloch

1919. *Pogonomyiodes atrata* Malloch, Rep. Can. Arctic Exped. 1913-16, iii, p. 76c.

Male.—Entirely black, the thorax and abdomen with slight grayish pruinescence. Wings clear. Calyptrae white. Halteres black.

Eyes separated by little more than width of anterior ocellus. Abdomen narrowly ovate; hypopygium small, not remarkably bristled; fifth sternite with a small rounded posterior incision, the angles on each side glossy, chiti-

nized. Fore coxae produced in the form of a large, stout, rounded protuberance at apex anteriorly; fore tibia with one or two postero-ventral bristles, no ventral or posterior bristles; fore tarsus subequal to tibia in length, fourth joint with two bristles at apex on posterior side; mid femur attenuated basally, swollen for a short distance beyond middle and armed on the swollen part ventrally with a clump of very long fine bristles; mid tibia with a variable number of bristles on postero-dorsal and posterior surfaces; hind femur with long bristles on apical half of antero-ventral surface; hind tibia slightly produced at apex on ventral side, with a few short bristles on basal half of antero-ventral surface, a fringe of setulae on antero-dorsal surface which are longer on basal half, and a number of longer bristles on basal half of postero-dorsal surface; basal joint of hind tarsus with a basal ventral bristle. Length, 6.5 mm.

Allotype.—♂; West Coast of Greenland, 1891, (Mengel and Hughes, on the Peary Expedition), [A. N. S. P.]. One other female seen, with same data.

NEODEXIOPSIS gen. n.

This genus is separated from *Cariciella* by the following characters: thorax with four pairs of dorso-central bristles; scutellum with four bristles of equal length; hind tibia with three bristles, one antero-ventral, one antero-dorsal, and one postero-dorsal, the first-mentioned bristle situated apicad of the second and not basad of it as in *Cariciella*.

Genotype.—*Dexiopsis basalis* Stein. Monobasic.

MACORCOENOSIA gen. n.

This genus differs from the preceding by the armature of fore tibia and form of the male abdomen particularly, the latter being elongate and cylindrical, with the fifth sternite exposed, while in *Neodexiopsis* it is ovate and the fifth sternite is usually concealed.

Genotype.—*Coenosia triseta* Stein. Monobasic.

XENOCOENOSIA gen. n.

The characters which serve to distinguish this genus from *Coenosia* are as follows: hind tibia with but one bristle on the antero-dorsal surface; ocellar bristles much weaker than upper orbitals, not longer than postvertical pair; lower posterior sternopleural bristle nearer to upper than to anterior bristle.

Genotype.—*Coenosia calopyga* Loew.

Xenocoenosia major sp. n.

Male.—Similar in color to *calopyga* Loew, differing in having the second antennal joint almost entirely dark brown and the apex of third joint slightly browned, the palpi brownish basally, the abdomen without distinct paired dorsal spots, and lacking the large glossy areas on each side of the third and fourth tergites.

Structurally closely resembles *calopyga*, but the armature of the femora is different. The fore pair and mid pair have rather long bristly hairs on basal two-thirds of antero-ventral surface, the mid femur has a strong bristle at middle on anterior surface, and a series of long slender bristles from base to beyond middle on postero-ventral surface; the hind femur has two long, strong bristles on antero-ventral surface, one before and one beyond middle, basad of and between which there are numerous setulose hairs, the postero-ventral surface has a few long irregular bristles from base to beyond middle; hind tibia with the median antero-dorsal bristle long.

Female.—Similar in color to the male, the antennae darker. The two basal abdominal tergites conspicuously yellowish testaceous.

Armature of the femora as in male, the apical antero-ventral bristle absent in both sexes.

Length, 4.5 to 5.5 mm.

Type and *allotype*.—♂ and ♀; Daytona, Florida, April 7, 1919, [B. S. N. H.]. Two females, *paratypes*, St. Augustine, Florida, April 12 and 18, 1919. Collected by Mr. C. W. Johnson.

Paratypes in collection of The American Entomological Society and Illinois State Natural History Survey.

Xenocoenosia floridensis sp. n.

This species very closely resembles *calopyga*, differing in color and chaetotaxy.

The legs have the femora with longer and denser soft hairs on the ventral surfaces. The mid tibia in the male type has the antero-dorsal median bristle much stronger than the postero-dorsal one, which is not the case in any specimen of *calopyga* which I have seen, but, as the females of both species have the bristles the same, this character may be variable. Length, 3.5 to 4 mm.

Type.—♂; St. Augustine, Florida, April 19, 1919, (C. W. Johnson). *Paratypes* and *allotype*.—One male and two females, topotypical.

Type in the collection of the Boston Society of Natural History, paratypes in collections of The American Entomological Society and Illinois State Natural History Survey.

Coenosia dicaeta sp. n.

Male.—Black, slightly shining, densely gray pruinulent. Head with face, cheeks, and orbits white pruinulent; interfrontalia opaque black when

seen from above; antennae, palpi and proboscis black. Thorax not vittate, the dorsum with brownish pruinescence. Abdomen without dorsal markings. Legs yellow, mid and hind coxae gray; tarsi of mid and hind legs largely fuscous. Wings clear, veins brown, yellow basally. Calyptrae white. Halteres yellow.

Head a little higher than broad in front; frons slightly less than one-third of the head-width at vertex, a little narrowed anteriorly; each orbit about half as wide as interfrontalia, with four bristles and a few hairs; parafacial almost linear; antennae extending nearly to the mouth, third joint angulate at apex; arista almost bare; one or two setulae above vibrissae. Acrostichal setulae in two rows; lower stigmatal bristle directed downward; scutellum with two long lateral bristles. Abdomen slender, cylindrical, slightly compressed apically; hypopygium and fifth sternite small (fig. 50). Legs with the normal number of bristles, which are of moderate length and strength; hind tarsus not much longer than its tibia, the basal joint less than half as long as tibia. Wings a little more than twice as long as wide, rounded apically; costa with fine setulae which are distinctly longer than the diameter of the costal vein; last section of fourth vein about 2.25 as long as the preceding; veins three and four slightly arcuate, almost parallel apically.

Female.—Differs from the male in having the fore coxae and all femora largely fuscous.

Length, 3 mm.

Type.—♂; Grant, Colorado, July 21, 1916, (E. C. Jackson).

Allotype.—♀; Farewell Creek, Saskatchewan, Canada, July, 1907.

A female from Montana has the apical scutellar bristles present but weak.

Type in collection of U. S. Bureau of Biological Survey.

***Coenosia denticornis* sp. n.**

Female.—Paler in color than *dichaeta*, the frons grayish pruinose when viewed from above and with the anterior margin rufous yellow. Legs yellow, all coxae and fore femora largely fuscous; tarsi black.

Head as broad as high; frons parallel-sided, a little over one-third as wide as head, each orbit less than half as wide as interfrontalia, with three bristles; antennae not extending to mouth, third joint thorn-like at apex on upper side; arista pubescent (fig. 41). Thoracic chaetotaxy as in *dichaeta*. Costal setulae not as long as diameter of costal vein. Length, 2.5 mm.

Type.—♀; Farewell Creek, Saskatchewan, Canada, July, 1907, [Illinois].

This species most nearly resembles *flavipes* Stein (nec Williston), but the third antennal joint is very differently shaped at apex in the latter.

Coenosia errans n. n.

1897. *Coenosia flavipes* Stein (nec Williston, 1896), Berl. Ent. Zeitschr., XLII, p. 268.

1913. *Coenosia steinii* Johnson (nec Verrall, 1912), Bull. Amer. Mus. Nat. Hist., xxxii, p. 78.

I take this opportunity to propose a new name for this species, the synonymy of which is indicated above.

I have before me two males, which agree perfectly with specimens in our collection collected by Hough in Georgia and named *flavipes* by him.

Localities.—Chestertown, Maryland, August 12, 1901, (E. G. Vanatta); Riverton, New Jersey, September 8, 1901, (H. L. Viereck), [all A. N. S. P.].

Coenosia impunctata sp. n.

Male.—Similar to *lata* Walker, differing in having the thoracic dorsum and dorsum of abdomen unmarked, the fore femora with only a black stripe on dorsum, the mid and hind femora with the apical third blackened dorsally, and the coxae all pale.

Structurally similar to *lata*, but the abdomen is more elongate, the hypopygium smaller, and the incision of the fifth sternite is slightly different. Length, 2.5 mm.

Type.—♂; Mt. Katmai, Alaska, July, 1917, (J. S. Hine), [Coll. Hine]. *Paratype*.—one male, topotypical.

Coenosia nivea Loew var. **brunnescens** var. n.

Male.—Differs from typical *nivea* in having the pruinescence much darker, only the face and cheeks being silvery white. Interfrontalia brown; antennae brownish yellow; palpi testaceous. Thorax with gray pruinescence, slightly brownish on dorsum. Two basal abdominal segments testaceous yellow, remainder gray. Wings not pale at bases.

Antennae shorter than in typical *nivea*. Thorax with an irregular series of weak acrostichals. Lateral prolongations of fifth sternite as in figure 45. Length, 2.5 mm.

Type.—♂; Swarthmore, Pennsylvania, July 22, 1906, [A. N. S. P., Type no. 6230].

Coenosia frisoni sp. n.

Male.—Black, subopaque, very densely pale gray pruinulent. Apex of second and all of third antennal joint, and palpi yellow. Thorax very indistinctly trivittate. Basal abdominal tergite and sides of second yellow; fifth sternite largely yellow. Legs yellow, tarsi slightly darker.

Head as in *flavicoxa* Stein. Body more robust than in that species, the fifth sternite less deeply incised, the tibial bristles much shorter and the antero-dorsal one on mid tibia absent or minute. Length, 2.5 mm.

Type.—♂; Cottonwood Grove, Urbana, Illinois, July 20, 1917, (J. R. Malloch), [Illinois].

Named in honor of Mr. T. H. Frison, who placed at my disposal means of access to the spot where the species was collected, and who has done some very good work in various lines of entomology.

Coenosia argenticeps sp. n.

Male.—Differs from *frisoni* in having the abdomen entirely without yellow color at base and the fifth sternite black.

Structurally similar to *frisoni*, but the tibial bristles are very much longer and more slender, the antero-dorsal and preapical hind tibial bristles being very long, the former exceeding one-half of the tibial length. From *oregonensis* it may be distinguished by the longer and more slender tibial bristles and the presence of but two distinct pairs of dorsal abdominal spots. All three species have the mid and hind tarsi very long, the basal joint of the mid pair being about half as long as the tibia, a character which separates the group from *compressa*, in which the basal joint of mid tibia is less than one-third of the tibial length. Length, 2 mm.

Type.—♂; Gallatin County, Montana, June 16, 1917, [Mont. Exp. Sta.].

Coenosia longispinosa sp. n.

Male.—Black, subopaque, densely gray pruinescent. Frons brownish black, paler in front; face, orbits and cheeks white pruinescent; antennae yellow, second joint partly infuscated; palpi yellow. Thorax rather indistinctly trivittate. Abdomen with a pair of large elongate blackish spots on each tergite, which extend from anterior to posterior margin; fifth sternite brownish. Legs yellow, tarsi slightly infuscated. Wings clear.

Head higher than wide in front; frons a little less than one-third of the head-width, each orbit about one-fourth as wide as interfrontalia, with five bristles; antennae extending four-fifths of the distance to mouth, third joint not angulate at apex; arista pubescent. Thoracic bristles longer than usual, acrostichals two-rowed. Abdomen slender, slightly longer than thorax, bristles not as long as those of thorax; hypopygium and fifth sternite small, the latter with a deep central incision. Legs slender, the bristles on femora and tibiae very long and slender, the preapical and antero-dorsal bristles on hind tibiae each almost as long as the tibia. Venation as in *flaxicoxa* Stein. Length, 3 mm.

Type.—♂; Grant, Colorado, August 19, 1914, (E. C. Jackson), [U. S. Biol. Surv.]. *Paratype*.—1 ♂; topotypical.

This species has the tibial bristles much longer than those of any other species known to me.

Coenosia laricata sp. n.

Female.—Black, densely pale gray pruinescent. Frons with yellowish gray, face and cheeks with white, pruinescence; antennae reddish yellow,

third joint brownish apically; palpi whitish yellow; proboscis glossy black. Thorax not vittate. Abdomen slightly testaceous on sides of two basal dorsal segments; segments three and four with a pair of blackish spots, the bases of the larger dorsal bristles set in black dots. Legs entirely yellowish testaceous. Wings clear, veins yellow. Calyptrae white. Halteres pale yellow.

Head at least 1.5 as wide as high when seen from in front; frons one-third as wide as head, orbits not differentiated, each orbit with three or four bristles, the upper, backwardly directed one slightly shorter than the second and ocellars; eyes almost hemispherical; parafacial, in profile, linear; cheek about as high as width of third antennal joint, the latter twice as long as second, its apex with a rather sharply produced upper angle; arista with very short pubescence; vibrissa long and strong. Presutural acrostichals two-rowed, rather long; lower stigmal bristle very minute or absent. Legs short and stout, the femora stouter than in most species of the genus; all tibial bristles long and strong, the antero-dorsal one on mid tibia longer than the postero-dorsal; hind tibia with one or two long setulae on middle of postero-dorsal surface; basal joint of hind tarsus less than one-third as long as tibia, with a short basal ventral bristle. Veins three and four parallel on apical sections, their apices in nearly vertical line. Length, 3.25 mm.

Type.—Cedar Lake, Lake County, Illinois, August 4, 1906, in a tamarack grove, [Illinois].

***Coenosia johnsoni* sp. n.**

Male.—Black, opaque, densely gray pruinulent. Interfrontalia opaque black when seen from above, remainder of head gray pruinulent; base of third antennal joint yellowish. Thorax not vittate. Abdomen with three pairs of rather faint brown spots on dorsum; hypopygium and greater portion of fifth sternite brownish. Legs entirely yellow. Wings slightly yellowish. Calyptrae and halteres nearly white.

Head as high as broad; frons about one-third as wide as head; each orbit with four bristles and a few hairs; parafacial very narrow; antennae not extending over three-fourths of the distance to mouth; third joint not sharply angulate; arista pubescent. Thoracic bristles longer and stronger than those of abdomen; acrostichals two-rowed. Abdomen elongate, cylindrical; hypopygium of moderate size; processes of fifth sternite about twice as long as broad, with long hairs on their inner halves and some strong bristles apically. Femoral bristles long, rather irregularly alternately long and short; femora stouter than usual; tibial bristles normal in number, not very long; hind tarsus not as long as tibia, basal joint less than one-third of the tibial length. Wing over 2.5 as long as broad. Length, 5 mm.

Type.—♂; Gold Rock, Ontario, Canada, July 21, 1905, (H. H. Newcomb), [Illinois].

***Coenosia dorsovittata* sp. n.**

Male.—Black, subopaque, densely gray pruinulent. Head black, with silvery white pruinoscence; antennae and interfrontalia with less conspicuous

pruinescence than orbits; palpi black. Thorax when viewed from above with the dorsum brownish black, the lateral margins and pleura with bluish gray pruinescence. Abdomen bluish gray pruinose, most noticeably so on sides, dorsum with the usual spots fused and forming a broad brown vitta, which is slightly subdivided in center; fourth tergite with a shining, bare, black area along each anterior lateral margin, which is only narrowly visible; hypopygium and fifth sternite black. Legs pale yellow, coxae largely grayish, tarsi slightly infuscated. Wings slightly grayish, white basally.

Frons in profile slightly buccate, one-third as wide as head; each orbit with four bristles, one very weak; parafacial narrowed below; antennae extending nearly to mouth, third joint narrowed apically; arista bare; palpi pointed. Thorax with strong bristles; acrostichals two-rowed. Abdomen a little longer than thorax, cylindrical basally, slightly compressed apically; hypopygium small; processes of fifth sternite about twice as long as broad, rounded at apices, with a few weak bristles. Legs slender, femoral bristles weak; tibial bristles normal in number, short and weak; hind tarsus much longer than tibia, basal joint at least half as long as tibia. Last section of fourth vein over three times as long as preceding; veins three and four slightly divergent apically. Length, 2.25 mm.

Type.—♂; Grant, Colorado, August 19, 1914, (E. C. Jackson), [U. S. Biol. Surv.].

***Fannia lasiops* sp. n.**

Male.—Black, thorax and abdomen slightly shining. Frontal and facial orbits silvery, interfrontalia and face grayish pruinose. Abdominal markings consisting of a broad deep-black triangle on each segment, the anterior extremity of each triangle produced stripe-like to anterior margin of segment. Legs black. Wings clear. Calyptrae white. Halteres with knobs fuscous.

Eyes hairy on upper half, separated at narrowest part of frons by a space equal to width across posterior ocelli; cheeks broader than usual, the distance from eye to vibrissa little less than distance between vibrissae; palpi normal. Presutural acrostichals two-rowed. Fore tibia without median bristle, the preapical dorsal one long. Mid femur hollowed out on ventral surface near apex; antero-dorsal surface with a closely placed series of short even bristles from base to apex; antero-ventral surface with long, rather closely placed bristles from base to beyond middle, the series becoming shorter from middle to ventral excavation and the last seven to nine duplicated, the excavation bare except near apex where there are five to six short bristles; postero-ventral bristles weaker and fully as long as antero-ventrals; mid tibia distorted on basal half, swollen on apical half, the ventral pubescence dense, erect, and at least as long as basal diameter of tibia, dorsal surface of tibia with rather long setulae, antero-dorsal surface with one long and one short bristle, postero-dorsal surface with two bristles; mid metatarsus with a sharp spur at base on ventral surface which is as long as third tarsal joint; hind femur curved, armed on antero-ventral surface with a series of long bristles

which extends from base to apex, posterior surface with closely placed long bristles, those on postero-ventral surface shorter and weaker than the antero-ventral series; hind tibia with two dorsal, one antero-dorsal and three antero-ventral bristles, the latter decreasing in length from upper to lower; hind coxae bare above. Third and fourth veins decidedly convergent apically. Squamae subequal. Length, 4.5 mm.

Type.—♂; Augerville Woods, near Urbana, Illinois, March 30, 1918, (J. R. Malloch), [Illinois].

This species is related to *hirticeps* Stein, but differs in the armature of the hind legs.

***Hydrophoria nigerrima* sp. n.**

Male and female.—Deep black, distinctly shining. Thorax in male without distinguishable vittae, indistinctly trivittate in female. Abdomen in male with the dorso-central vitta so broad that it covers almost the entire dorsum; in female much narrower. Wings in male slightly infusate. Halteres black in both sexes.

Male.—Eyes separated by more than width across posterior ocelli; orbits with very long bristles on entire length; longest hairs on arista not as long as width of third antennal joint; parafacial in profile wider than third antennal joint and more than half as wide as height of cheek, the latter with numerous long, slender bristles on margin, some of these extending above vibrissa. The portion of fourth tergite (third visible) which overlaps is ventrally rather densely bristled; fifth sternite with numerous rather long hairs, the inner margin of each process basally with a fringe of long setulose hairs. Hind femur with a series of long slender bristles on almost the entire length of postero-ventral surface; hind tibia with from five to seven bristles of unequal lengths. Costal thorn small.

Female.—Differs from the male in having the eyes separated by about one-half the head-width, the orbits densely hairy, with at least one supra-orbital forwardly directed, and one pair of cruciate bristles and a few hairs on interfrontalia. The abdomen is pointed at apex, and there are no apical thorns.

Length, 6 to 7 mm.

Type.—♂; Mt. Rainier, Washington, 7000 to 9000 feet, on snow, August, 1917, (A. L. Melander). *Allotype*.—♀; same data.

Paratypes.—Seven specimens, same data as type; two males and two females, Paradise Park, Mt. Rainier, August, 1917, (A. L. Melander); one male, one female, Mt. Rixford, California, on snow, August 12, 1914, (Coll. Aldrich).

The type has been returned to Professor Melander, and paratypes have been placed in the collections of the Academy of

Natural Sciences of Philadelphia and the Illinois Natural History Survey.

Hydrophoria polita sp. n.

Male.—This species most closely resembles *arctica* Malloch, but the basal hypopygial segment, on the greater portion of its surface above, is armed with weak erect hairs, the stout bristles being confined to apical half. The eyes are separated at narrowest part of frons by a distance about as wide as anterior ocellus; the longest hairs on arista are as long as width of third antennal joint; the hind femur has strong bristles from base to beyond middle on postero-ventral surface.

Female.—Similar in general appearance to the female of *divisa*. The abdomen is much less noticeably shining than in *arctica*, without distinct lateral checkerings, and the dorso-central vitta does not reach apex. Chaetotaxy of legs as in male.

Length, 7 to 7.5 mm.

Type.—♂; Bozeman, Montana, elevation 5400 feet, July 23, 1902, [Mont. Agric. Station]. *Allotype*.—♀; topotypical. *Paratype*.—♂; in poor condition, Wells, Nevada, July 12, 1911, (Aldrich).

Hydrophoria katmaiensis sp. n.

Male.—Differs from the general rule in the genus in having the tibiae largely rufous-yellow, and the long hairs at junction of calyptera brown or fuscous.

Eyes separated by about width of anterior ocellus; parafacial much narrower than in *polita*, not as wide as third antennal joint; cheek very much rounded off posteriorly. Basal hypopygial segment with rather long bristly hairs; armature of dorsum of abdomen weak, in sharp contrast to the strong bristles on the portions of dorsal segments which curve under abdomen, especially to those on incurved portions of segments three and four; fifth sternite with long bristly hairs, the processes fringed on basal half of their inner margins. Hind femur with bristles to beyond middle on postero-ventral surface; hind tibia with two long and one or two short (basal) bristles on postero-dorsal surface. Costal thorn very small. Length, 6.75 mm.

Type.—♂; Katmai, Alaska, August, 1917, (J. S. Hine), [Coll. Hine].

Hydrophoria occidentalis sp. n.

Male.—Similar to *polita* in general appearance, but the hypopygium has only slender hairs on basal portion, the preceding segment is largely pruinosecent and armed with numerous hairs, and the hind tibia has but three postero-dorsal bristles. Length, 7 mm.

Type.—♂; Wells, Nevada, July 12, 1911. *Paratype*.—♂; Pullman, Washington, June 8, 1898, [Wash. Sta. Coll.]. Type in collection of Dr. Aldrich.

Hydrophoria proxima sp. n.

Male.—General color more intensely black than in *divisa*, face black; abdomen with a broad dorso-central vitta, which is laterally distended on anterior and posterior margins of each segment.

Eyes more widely separated than in *divisa*, the interfrontalia with a pair of cruciate bristles; parafacial broader than in *divisa*, cheek with fewer marginal bristles. Presutural acrostichals two-rowed. Mid femur with the postero-ventral bristles not extending to base.

Female.—Similar to the female of *divisa*, but darker in color, the tibiae being usually black.

The mid tibia has a strong antero-ventral bristle beyond middle, but in other respects the species are very similar.

Length, 5.5 mm.

Type.—♂; Machias, Maine, July 21, (C. W. Johnson), [B. S. N. H.]. *Allotype*.—♀; Princeton, Maine, July 12, 1909. *Paratypes*.—One male and one female, same data as allotype, and same collector. Paratypes in collections of Illinois State Natural History Survey and The American Entomological Society.

Hydrophoria flavohalterata sp. n.

Male.—This species shows an approach to those with the third tergite tufted on latero-posterior angles, but the peculiar brownish or fuscous pencil or tuft of stiff bristly hairs is absent, there being only a greater number of erect bristles present than in *uniformis* and its allies.

Eyes separated by at least the width across posterior ocelli; arista with the longest hairs but little longer than its basal diameter. Third tergite with strong bristles on latero-posterior angles; fifth sternite fringed along the inner margins of processes and with a few bristly hairs at or near apices. Hind femur with bristles on basal half of postero-ventral surface; hind tibia normally with three postero-dorsal bristles, the antero-ventral surface with four or five short bristles.

Female.—I can not separate by any structural character the females of this species from those of *borealis*. Both very closely resemble the female of *spinicauda*, but are separable from it by the absence of presutural acrostichals. Length, 5 to 6.25 mm.

Type.—♂; Moscow, Idaho, May 5, 1912, [Coll. Aldrich]. *Allotype*.—♀; same locality as type, June 6, 1912. *Paratypes*.—Same locality as type, May 22, 1913, April 23, 1912, July 13, 1907, June 5, 1912; Kamiac Butte, Washington, June 1, 1912; Lawyer's Canyon, Idaho, June 16, 1909; [all from the collection of Dr. Aldrich]; Ilwaco, Washington, August 27, 1917, (A. L. Melander).

Hydrophoria coloradensis sp. n.

Male.—Similar to the preceding species in color, differing in having the base of radius yellowish, and the dorso-central abdominal vitta more distinctly tapered apically. Thorax with at least one pair of well developed presutural acrostichals; mesopleura with three or four bristles near anterior upper angle. The costal thorns are smaller than in *flavohalterata*, and the fifth sternite more densely hairy. Length, 6 mm.

Type.—♂; Tennessee Pass, Colorado, July 25, 1917, [Coll. Aldrich].

This species may be *nuda* Schnabl.

Hydrophoria borealis sp. n.

Male.—Color darker than in *uniformis*, and similar to that of *flavohalterata*. Eyes separated by a distance at least as great as width across posterior-ocelli; parafacial in profile at base of antennae distinctly broader than third antennal joint; hypopleura bare; fourth tergite with a tuft of fuscous bristly hairs on each posterior lateral angle; processes of fifth sternite broad, fringed along the inner margins with fine hairs, the disc with a few bristly hairs. Hind femur with a series of long, slender bristles on basal half of postero-ventral surface.

Female.—Similar to the male in color, but not readily separable from *flavohalterata*. Parafacial in profile but little narrowed below, as wide as third antennal joint for almost its entire length. Hind femur with several long hair-like bristles at base on postero-ventral surface. At least one of the costal thorns long and conspicuous, sometimes as long as inner cross-vein, or nearly so.

Length, 5 to 6.25 mm.

Type.—♂; Katmai, Alaska, June, 1917, (J. S. Hine), [Coll. Hine]. *Allotype*.—♀; same locality as type. *Paratypes*.—1 ♂, topotypical; eleven specimens, Mt. Constitution, Washington, July 17, 1909, [Coll. Dr. Aldrich].

Hydrophoria elongata sp. n.

Male.—Differs from the preceding species and *ambigua* in having the abdomen more brownish gray and with a very indistinctly limited dorso-central vitta.

The eyes are separated by a space at least equal to width across posterior ocelli; the arista has the longest hairs about equal in length to width of third antennal joint; parafacials but little narrowed below, as wide as third antennal joint; apical portion of proboscis stouter than in *borealis*. Thorax with one or two pairs of presutural acrostichals. Abdomen more distinctly tapered than in other species, the second tergite very noticeably longer than third, the latter about twice as long as fourth; fifth sternite glossy black, almost entirely bare on disc of processes, their inner margins with a fringe of hairs. Fore tibia with one or two posterior bristles, one of which is longer

and more slender than usual; fore tarsus with a very long bristle at apex of fifth joint above; bristles on antero-ventral surface of hind femur more widely separated than usual, those on basal half of femur not as long as diameter of femur. Costal thorn short.

Female.—Similar to the female of *ambigua* in general habitus. The abdomen is more yellowish, and has a narrower dorso-central vitta and less conspicuous checkerings.

Length, 6.5 to 7.5 mm.

Type.—♂; Pullman, Washington, [Illinois]. *Allotype*.—♀; topotypic. *Paratypes*.—Same locality, [Coll. Dr. Aldrich]. Six specimens.

MACROPHORBIA gen. n.

Generic Characters.—Differs from *Hylemyia* in having four pairs of post-sutural dorso-central bristles, the lower calyptra almost or quite as large as the upper, the abdomen broadly ovate in male, the mid tibia in both sexes with one or two median ventral bristles, and the cruciate frontal bristles in female duplicated.

Genotype.—*Macrophorbia houghi* sp. n.

Macrophorbia houghi sp. n.

Male and female.—Black, glossy, thorax and abdomen with bluish gray pruinescence. Head black, orbits and face with silvery pruinescence; interfrontalia in female opaque black. Thorax quadrivittate. Abdomen in male with dense pruinescence on dorsum, when seen from behind with a narrow black central vitta, and a black triangular mark at each anterior lateral angle of each segment; hypopygium glossy black; abdomen of female almost without pruinescence. Legs black. Wings clear. Halteres with yellowish knobs.

Male.—Eyes bare, separated at narrowest part of frons by a distance less than equal to width across posterior ocelli; parafacial at widest point nearly as wide as third antennal joint, slightly narrowed below; cheek with its posterior margin rounded off, the posterior half almost entirely covered with hairs, anterior half with hairs along lower margin only; vibrissa strong, the hairs extending upward on facial ridges about one-third of the distance to base of antennae; third antennal joint broad, about 1.5 as long as second; arista nearly bare, second joint distinctly longer than thick, third swollen for a short distance at base. Thorax with from two to four pairs of pre-sutural acrostichals; anterior two pairs of post sutural dorso-centrals weaker than the posterior; sternopleural bristles 2:2, some of the hairs near posterior upper angle bristle-like. Abdomen not 1.5 as long as broad; dorsum rather densely haired; hypopygium large; processes of fifth sternite with dense, short hairs along their inner third and long irregular bristles on outer two-thirds.

Fore tibia much longer than fore tarsus, armed with about six short bristles from base to apex on antero-dorsal surface, and two or three longer bristles on posterior surface; mid tibia with two or three antero-dorsal, three or four postero-dorsal, two or three posterior and one or two ventral bristles; hind femur with an almost complete series of bristles on antero-ventral surface, and three or four on middle of postero-ventral surface; hind tibia with four or five antero-ventral, about nine antero-dorsal and from five to seven postero-dorsal bristles, the posterior surface with a number of setulose hairs on basal half. Costal thorn very small; outer cross-vein very much curved; third vein ending just in front of apex of wing, fourth considerably beyond it.

Female.—Differs from the male in having the frons a little over one-third as wide as head, the interfrontalia with two pairs of cruciate bristles, the palpi broadened, the fore tibia with one of the antero-dorsal bristles much stronger than the others, and the hind tibia without posterior setulose hairs.

Length, 7 to 9 mm.

Type.—♀; New Bedford, Massachusetts, May 10, 1896, (Hough). *Allotype*.—♂; Hampton, New Hampshire, April 26, 1910, (S. A. Shaw). *Paratypes*.—Two males, Sherborn, Massachusetts, April 30, 1912, May 26, 1913; one male, Danvers, Massachusetts, May 19, 1914; one female, Melrose Highlands, Massachusetts, May 3, 1912, (H. E. Smith); one male, Clementon, New Jersey, April 21, 1902, (C. W. Johnson).

The type and one male paratype are in the collection of the Illinois Natural History Survey, the allotype, a male and a female paratype are in the collection of the Boston Society of Natural History, and one male paratype is in the collection of The American Entomological Society.

ANTHOMYIELLA gen. n.

This genus differs from *Anthomyia* in having the propleura bare cephalad of the spiracle, and in having a very long strong bristle on dorsal surface of fore tibia distad of middle, the latter possessed by no allied genus known to me.

Genotype.—*Anthomyia pratincta* Panzer.

Anthomyiella pratincta (Panzer)

This European species is very widely distributed throughout North America, occurring commonly on various flowers such as golden rod. I have taken it commonly on *Chrysopsis* and *Solidago* in the sand regions of Illinois.

There is one specimen in the collection before me from Swarthmore, Pennsylvania, July 23, 1905, [A. E. S.].

XENOPHORBIA gen. n.

This genus is separable from *Hylemyia* by the following combination of characters: Third antennal joint barely longer than second, much broader at apex than at base; face elevated in center between bases of antennae, the latter distinctly separated, the elevation forming a broad flat ridge, which gradually decreases in height, to midway to mouth-margin; vibrissal angle very much produced, the distance from its anterior margin to lower margin of eye about twice as great as width of parafacial at base of antenna; palpi club-shaped; thorax with four pairs of post-sutural dorso-central bristles; posthumeral bristle normally duplicated.

Genotype.—*Stomoxys muscaria* Fabricius.

Xenophorbia muscaria (Fabricius)

This species, which has generally been referred to *Phorbia*, is common in the Northwest. I have found it very commonly on flowers of willows and dandelion on the hills in Scotland.

Pegomyia luteola sp. n.

Male.—Yellowish testaceous, slightly shining. Frontal triangle red, orbits silvery, third antennal joint almost entirely brown, palpi yellow; occipital hairs black. Abdomen with whitish pruinescence on dorsum, when viewed from behind a rudimentary dorso-central vitta is visible; posterior margins of tergites narrowly fuscous; lateral processes of fifth sternite black, covered with black hairs. Legs yellow, apices of hind femora slightly browned; tarsi black. Wings clear. Calyptrae and halteres yellow.

Eyes separated by about the width of anterior ocellus, the orbits contiguous for a short distance below ocelli; third antennal joint on its inner side about 1.5 as long as second; arista pubescent, slightly swollen at base; profile as in *unicolor* Stein, the cheeks less than one-sixth as high as eye; a small hair above vibrissa. Thorax as in *unicolor*, but the anterior acrostichals are separated by less space than they are from the dorso-centrals, and there is but one irregular series of setulae between them. Abdomen depressed, the hypopygium large; fifth sternite with its lateral processes densely covered with erect black hairs. Fore tibia with an antero-dorsal and a posterior bristle; mid tibia with one antero-dorsal, one postero-dorsal, and two posterior bristles; hind femur with a series of antero-ventral bristles which does not extend to base, and a few shorter bristles on middle of postero-ventral surface; hind tibia with one antero-ventral, two antero-dorsal and two postero-dorsal bristles. Outer cross-vein almost straight; costal thorn minute. Length, 5.75 mm.

Type.—♂; Eastport, Maine, July 14, (C. W. Johnson), [B. S. N. H.].

This species resembles *unicolor* Stein, but may be separated from it and allied species by the armature of the fifth sternite.

***Pegomyia unguiculata* sp. n.**

Male.—Black, shining, with moderately dense grayish pruinescence. Head black, parafacials yellowish in front at base of antennae; antennae black; palpi yellowish testaceous. Thorax indistinctly vittate. Abdomen with a rather indistinct black central vitta on second tergite, and a large subtriangular black mark on third and another on fourth; hypopygium glossy black; fifth sternite glossy brownish black. Legs yellowish testaceous, fore femora above, and mid and hind femora on apical third above slightly brownish; tarsi fuscous. Wings clear, veins brown. Calyptrae and halteres yellow.

Eyes separated by not more than width of anterior ocellus; third antennal joint about twice as long as second, and three times as long as height of cheek; arista almost bare; parafacial at base of antennae not as wide as third antennal joint, much narrowed below. Thorax with two pairs of widely separated presutural acrostichals, between which there are a few hairs; prealar very small; post humeral duplicated; scutellum with a few hairs on disc and a number on lateral margins; sternopleurals 1:2; many hairs surrounding stigmal bristle. Abdomen depressed; second tergite (first visible) longest, the others becoming progressively shorter to fifth; hypopygium larger than usual, the basal segment with numerous long bristly hairs; fifth sternite with the processes as shown in figure 40. Fore tibia with or without an antero-dorsal and a posterior bristle beyond middle; mid tibia with bristles as in preceding species; hind femur with a series of rather irregular widely spaced bristles on antero-ventral surface, and another one of shorter bristles on basal three-fifths of postero-ventral; hind tibia with one or two antero-ventral, three antero-dorsal and two postero-dorsal bristles. Wings as in *unicolor* Stein. Lower calyptra slightly protruded. Length, 4.5 to 5 mm.

Type.—♂; Lake Louise, Alberta, Canada, July 15, 1908, (C. S. Minot), [B. S. N. H.]. *Paratypes*.—Seven males, topotypical.

This species may be readily distinguished from any of its allies by the peculiar fifth abdominal sternite.

***Pegomyia labradorensis* sp. n.**

Male.—Reddish testaceous, shining. Orbits and parafacials blackened except anteriorly; third antennal joint largely brown; palpi yellow. Thorax with a median fuscous vitta. Abdomen darker than thorax, with a dorso-central series of reddish brown elongate spots. Legs reddish testaceous; tarsi fuscous. Wings yellowish, veins brown. Calyptrae and halteres yellow.

Eyes separated by about the width between posterior ocelli; parafacial at base of antennae about as wide as third antennal joint, a little narrowed below; cheek a little higher than width of third antennal joint, with a series

of marginal bristles; arista pubescent; third antennal joint twice as long as second. Posthumeral bristle duplicated, no setae adjacent to it; prealar bristle long; prosternal plate almost parallel-sided anteriorly. Abdomen subcylindrical, slightly tapered; fifth sternite with moderately long processes which are rounded apically and unchitinised, have some very fine hairs along inner margins and some long bristles on apical half. Fore tibia with an antero-dorsal and a posterior bristle; fore tarsus much longer than fore tibia; mid femur with two antero-ventral bristles, one near base and the other near apex, and a strong postero-ventral bristle near base; mid tibia with one antero-dorsal, one postero-dorsal, and one or two posterior bristles; hind femur with an irregular series of antero-ventral bristles, and three or four strong bristles on basal half of postero-ventral surface, the surface hairs long; hind tibia with one antero-ventral, two antero-dorsal and two postero-dorsal bristles, and a posterior bristle near base, which is most exceptional in this genus. Costal thorn moderately long. Length, 6 mm.

Type.—♂; Nain, Labrador, August, 1918, [Illinois].

***Pegomyia triseta* sp. n.**

Male.—Yellowish or reddish testaceous. Back of head, cheeks and orbits blackened, gray pruinose; antennae rufous yellow, third joint infuscated on outer side except basally; palpi yellow. Thorax with the exception of the anterior lateral angles and the scutellum black, gray pruinose, the dorsum indistinctly vittate. Abdomen slightly gray pruinose on dorsum, and with a darker, reddish testaceous dorso-central vitta. Legs reddish testaceous, the tarsi infuscated. Wings, calyptae, and halteres yellowish.

Eyes separated by about the width of anterior ocellus; third antennal joint about 2.75 as long as second; parafacial narrower than third antennal joint at base of antennae, much narrowed below; cheek barely half as high as length of third antennal joint. Thorax with two or three pairs of strong presutural acrostichals and beside them some weaker hairs; prealar not over one-third as long as the bristle behind it; posthumeral bristle duplicated; sternopleurals 1:2; one or two hairs at base of stigmal bristle. Abdomen depressed; second tergite longest; hypopygium small; fifth sternite with the processes rather short, not broad, unchitinised, the surface close to inner margins with rather dense erect short black hairs, but not fringed. Fore tibia with an antero-dorsal and one or two posterior bristles; mid tibia as in preceding species; hind femur with similar armature to that of preceding species; hind tibia with one antero-ventral, three or four antero-dorsal and usually three postero-dorsal bristles. Veins three and four slightly convergent apically. Lower calyptra slightly protruded. Length, 6 mm.

Type.—♂; Cottage Beaulieu, Montreal, Canada, June 14, 1906, [Illinois]. *Paratypes*.—Two males; Auburndale, Massachusetts, June 13, 1908, (C. W. Johnson).

This species resembles *winthemi* Meigen in habitus and size, but differs in color of palpi, and armature of fifth sternite, tibiae and thorax.

***Pegomyia fuscofasciata* sp. n.**

Male.—Differs from the preceding species in having the head black with the exception of the second antennal joint and base of third and the palpi, the thorax with the exception of the apex of scutellum black, and the abdomen with a narrow fuscous fascia on posterior margin of each tergite.

Head as in preceding species, but the third antennal joint broader and not so long. Thorax with posthumeral bristle duplicated and no small adjacent hairs; sternopleurals 2:2, the lower anterior one weak, sometimes absent. Abdomen depressed; tergites becoming progressively shorter to fourth; hypopygium larger than usual, distinctly but not greatly protruded ventrally; fifth sternite with the processes short, their inner margins with erect fine hairs. Armature of legs as in *triseta*, but the hind tibia has two postero-dorsal bristles. Veins three and four slightly convergent apically. Lower calyptra very noticeably protruded. Length, 4.25 to 5 mm.

Type.—♂; Barnstable, Massachusetts, July 5, 1906, [B. S. N. H.]. *Paratype*.—Two males; Edgartown, Massachusetts, June 28, (C. W. Johnson); one male, Southbridge, Massachusetts, July 27, 1912.

Most nearly related to *triseta*.

***Pegomyia spinigerellus* sp. n.**

Male.—Brownish black, slightly shining, with dense grayish pruinescence. Head rufous, occiput and parafacials partly gray; third antennal joint fuscous except at base. Thorax not distinctly vittate; scutellum slightly testaceous apically. Abdomen yellowish testaceous, dorsum infuscated except at apices of tergites, with a poorly defined brown dorso-central vitta, the bristles and hairs set in brown dots. Legs yellowish testaceous, femora slightly darker, tarsi subfuscous. Wings clear, cross-veins narrowly infuscated. Calyptrae and halteres yellow.

Eyes separated by nearly the width across posterior ocelli; orbits linear above, each with three fine bristles on lower half; parafacial at base of antennae a little wider than third antennal joint, slightly narrowed below; antennae extending about three-fourths of the way to mouth-margin, third joint about 1.5 as long as second; arista very long, second joint about as long as thick, pubescence very short; cheek higher than length of third antennal joint, with a series of bristles on lower margin. Presutural acrostichals short, two-rowed; post-humeral not duplicated, the area laterad of post-humeral bare; prealar absent; sternopleurals 1:2. Abdomen cylindrical; hypopygium normal in size; fifth sternite with the processes short, rounded apically, not glossy, with a few weak setulose hairs. Fore tibia with an antero-dorsal and one or two posterior bristles near middle, the apex with

posterior, postero-dorsal, dorsal, and a weak antero-dorsal bristle; fore tarsus much longer than tibia; mid femur with a strong bristle beyond middle on antero-ventral surface; mid tibia with the same number of bristles as in the preceding species; hind femur with two or three bristles on basal half and two or three on apical half of antero-ventral surface, a rather wide space between the series, and a few bristles on basal half of postero-ventral surface; hind tibia with the usual five bristles. Costal thorn much longer than the inner cross-vein; costal setulae at least twice as long as diameter of costa up to apex of auxiliary vein, beyond that point a little longer than costal diameter; third vein with a few microscopic setulae at base. Lower calyptra not or very little protruded. Length, 4.5 to 5 mm.

Type.—♂; Havana, Illinois, April 30, 1914, [Illinois]. *Paratypes*.—1 ♂; Havana, Illinois, June 3, 1918; 1 ♂; Meredosia, Illinois, August 22, 1917. All three specimens were taken by the writer in dry sandy places, very probably associated with some of the very numerous burrowing bees which occur there.

Allied to *spinosissima* Stein, but that species is larger and has the eyes separated by much more than the width across posterior ocelli.

***Pegomyia emmesia* sp. n.**

This species is so closely related to *Hylemyia juvenilis* Stein that it is necessary only to indicate the points of difference.

Male.—Eyes more widely separated than in *juvenilis*, second antennal joint partly pale, arista with sparse short hairs, the longest hairs not nearly as long as width of third antennal joint, palpi much smaller and not broadened. Fifth sternite without dense brush-like fringe of stiff short black setulae on basal half of inner margin of each process. Wings yellowish. Hind tibiae with a posterior bristle in line with the upper postero-dorsal one.

Male.—Eyes more widely separated than in *juvenilis*, second antennal joint partly pale, arista with much shorter hairs, palpi much smaller and not broadened, wings yellowish.

Female.—Differs from the female of *juvenilis* in having the cruciate frontal bristles absent, the arista shorter haired, the palpi smaller and not dilated, and the wings conspicuously yellow. The hind tibia in both species in this sex have the same armature and the fore tarsi are slender.

Length, 5 to 6.5 mm.

Type.—♂; Savanna, Illinois, June 14, 1917, (J. R. Malloch), [Illinois]. *Allotype*.—♀; same locality as type, June 11, 1917, (J. R. Malloch). *Paratypes*.—Males and females; Savanna, Illinois, June 13, 14, 1917; Elizabeth, Illinois, July 7, 1917; Urbana, Illinois, July 21, 1889, (C. A. Hart); Oregon, Illinois,

June 20, 1917, (J. R. Malloch); Plummer's Island, Maryland, April 26, 1908, July 11, 1909, September 1, 1907, September 29, 1915 and October 22, 1915, (W. L. McAtee); June 30, 1907 and October 13, 1906, (A. K. Fisher); Swarthmore, Pennsylvania, June 11, 1905 and September 3, 1914, (E. T. Cresson, Jr.). Twenty specimens.

The Illinois specimens are in the collection of the Illinois Natural History Survey; the Maryland specimens are in the collection of the U. S. Bureau of Biological Survey; and the Pennsylvania specimens in the collection of The American Entomological Society.

***Pegomyia subgrisea* sp. n.**

Male.—Black, opaque, densely gray pruinescent. Interfrontalia, anterior margin of parafacial at base of antennae, anterior third of cheeks and apex of second antennal joint, rufous; palpi fuscous. Dorsum of thorax with two faintly indicated linear dark submedian vittae on anterior half. Abdomen with a dark gray linear dorso-central vitta; sixth tergite, hypopygium, and fifth sternite reddish testaceous. Legs reddish testaceous, fore femora with a dark gray stripe on postero-dorsal surface, tarsi subfuscous. Wings clear, veins yellow. Calyptres and halteres yellow.

Eyes separated by about three times the width across posterior ocelli; each orbit with three or four bristles on anterior half; parafacial at base of antennae distinctly wider than third antennal joint, a little narrowed below; cheek a little higher than widest part of parafacial; third antennal joint over twice as long as second; arista with very short pubescence. Thorax with one pair of strong presutural acrostichals; prealar much more than half as long as the bristle behind it; post-humeral not duplicated; sternopleurals 1:2. Abdomen cylindrical; hypopygium moderate in size; fifth sternite with the processes of moderate length, rounded at apices, not chitinised, with microscopic hairs and two or three downwardly directed setulae on inner margin in apical half, and some long bristles on outer half. Fore tibia with an antero-dorsal and two posterior bristles beyond middle; mid femur with a strong bristle near base and another beyond middle on antero-ventral surface, and two or three bristles on basal half of postero-ventral; mid tibia with an antero-ventral, one antero-dorsal, one postero-dorsal and three or four posterior bristles; hind femur with a series of five or six strong, widely-spaced bristles on antero-ventral surface, and three or four on basal two-thirds of postero-ventral; hind tibia with two antero-ventral, two antero-dorsal and two postero-dorsal bristles. Costal thorn longer than inner cross-vein, the setulae longer than costal diameter; outer cross-vein much curved; last section of fourth vein not longer than preceding section. Length, 8 mm.

Type.—♂; Bozeman, Montana, July 14, 1906. [Illinois].

Differs from *flavicans* Stein in having the apex of the abdomen reddish testaceous, the mid tibia with an antero-ventral bristle.

and the hind tibia with two antero-ventral bristles instead of one.

Pegomyia quadrispinosa sp. n.

Male.—Similar to *subgrisea* in color; the cheeks and parafacials reddish, abdomen entirely black, fore femora and coxae almost entirely black.

Eyes separated by over twice the width across posterior ocelli; each orbit with seven or eight bristles on anterior half; arista with its longest hairs a little longer than its basal diameter; profile as in *subgrisea*. Thorax with two pairs of strong presutural acrostichals; post-humeral duplicated. Processes of fifth sternite longer than in the preceding species, but in other respects similar. Fore tibia with one antero-dorsal and one posterior bristle; mid femur as in *subgrisea*; hind femur with a series of strong, rather irregular, and somewhat closely-placed bristles from base to apex on antero-ventral surface, and a few similar bristles on basal half of postero-ventral; hind tibia with two or three antero-ventral, two antero-dorsal and two postero-dorsal bristles. Wings as in *subgrisea*.

Female.—Differs from the male in having the fore femora with a fuscous stripe on postero-dorsal surface.

Frons over one-third of the head-width; interfrontalia without cruciate bristles; orbits bare except for the strong bristles.

Length, 7 to 8 mm

Type.—♂; Gallatin, Montana, July 9, 1900, [Illinois]. *Allo-type*.—♀; Monida, Montana, June 27, 1913.

Pegomyia fringilla sp. n.

Male—Black, slightly shining, thorax and abdomen with drab-gray pruinescence. Parafacials and cheeks brownish; palpi and antennae black. Thorax with four black vittae. Abdomen with a rather broad black dorso-central vitta, which is slightly interrupted at posterior margin of each tergite. Legs black, hind tibiae reddish. Wings clear, veins black, paler basally. Calyptrae dull yellow. Halteres yellow.

Eyes large, separated at narrowest part of frons by about the width of anterior ocellus; parafacial at base of antenna about half as wide as third antennal joint, narrowed below; cheek about as high as width of third antennal joint, with a series of bristles along the lower margin, two or three of those near anterior margin upwardly curved; vibrissal angle not produced; arista almost bare. Thorax with three pairs of acrostichals and some short hairs in front of suture; prealar about one-fourth as long as the bristle behind it; sternopleurals 1:2. Abdomen depressed, rather broad, sides subparallel; hypopygium small; processes of fifth sternite short, narrow, slightly chitinised apically, with their inner margins sparsely fringed with short hairs on basal half, and no long surface bristles. Fore tibia with a posterior median bristle, the apical dorsal and posterior bristle of moderate size; fore tarsus slender, longer than tibia; mid femur with three or four bristles on basal half of postero-ventral surface, mid tibia with one antero-dorsal, one postero-dorsal and

two or three posterior bristles; hind femur with a series of bristles on antero-ventral surface and another of shorter bristles on basal half of postero-ventral; hind tibia with one antero-ventral, three antero-dorsal and two postero-dorsal bristles. Costal thorn very small; wing slightly pointed; third and fourth veins slightly convergent apically, the former ending almost in wing-tip; outer cross-vein curved. Lower calypttra protruded.

Female.—Differs from the male in being opaque, densely gray pruinose, and in having the interfrontalia, parafacials and the cheeks largely rufous, the thorax very indistinctly brown vittate, the abdomen with the dorso-central vitta very faint, and all tibiae rufous.

Interfrontalia without cruciate bristles; orbits well defined, each about one-half as wide as interfrontalia. Fore tibia with an antero-dorsal bristle beyond middle; antero-dorsal mid tibial bristle very much stronger than in male; hind femur with fewer bristles on antero-ventral and postero-ventral surfaces. Costal thorn larger than in male.

Length, 5 mm.

Type.—♂; Swarthmore, Pennsylvania, May 5, 1907, [A. N. S. P., Type no. 6231]. *Allotype*.—♀; topotypical. *Paratypes*.—One male, topotypical; two males and one female, Augerville Grove, Urbana, Illinois, April 18, 1919; one male, Savoy, Illinois, May 4, 1916, on apple blossoms, (J. R. Malloch); one male, Falls Church, Virginia, April 27, 1915, (C. T. Greene).

This species superficially resembles *Hylemyia trivittata* Stein, but the abdomen has a broader dorsal vitta, and is not conspicuously narrowed in the male at apex, nor is the fourth tergite conspicuously elongated in the female, and the bristling of the hind tibia is different.

Eremomyioides fuscipes sp. n.

Male and female.—Black, slightly shining. Orbits, face, and cheeks with whitish pruinoscence, anterior margin of interfrontalia in both sexes usually reddish; second antennal joint rufous. Wings slightly infuscated; inner cross-vein clouded. Calypttrae white. Halteres yellowish, the knobs brownish yellow.

Male.—Eyes separated by a little more than the width across posterior ocelli; orbits with hair-like bristles to beyond middle; second antennal joint without pruinoscence on inner surface, the basal half granulose, apical half with some rather large irregular punctures, the apical margin distinctly angulated; third joint rounded at apex, minutely pilose; arista microscopically pubescent; vibrissa long, a series of six or seven long bristles ventrad of it, and a group of about a dozen short stout bristles at its base; parafacial wider than third antennal joint and over half as wide as height of cheek. Post-humeral bristle usually duplicated; three pairs of long presutural acrostichals present normally; prealar bristle very long. Fifth abdominal sternite with

very fine hairs on inner margins of processes, the apical half of each process with short bristly hairs on its inner half. Normal bristling of tibiae as follows: fore tibia, one antero-dorsal, two posterior; mid tibia, one antero-ventral, one antero-dorsal, one postero-dorsal and two or three posterior; hind tibia, two antero-ventral, two antero-dorsal and two postero-dorsal. Costal setulae not longer than diameter of costal vein; costal thorn as long as inner cross-vein.

Female.—Differs from the male in having the eyes separated by over one-third of the head-width; the interfrontalia usually with a few weak hairs near where the cruciate bristles of other genera occur, and the second, third and fourth fore tarsal joints slightly but distinctly dilated.

Length, 6.75 to 7.5 mm.

Type.—♂; Urbana, Illinois, March 11, 1918, [Illinois]. *Allotype*.—♀; topotypical. *Paratypes*.—From same locality as type, March 16, 17, and 18, 1918; fifteen specimens, taken by T. H. Frison and the writer at Augerville woods; one male, March 3, 1918, Brownfield woods, (T. H. Frison); one male, Homer, Illinois, March 21, 1909; one male, Plummer's Island, Maryland, April 7, 1912, (W. L. McAtee).

Eremomyioides similis sp. n.

Male and female.—Similar in color to the preceding species.

Male.—Differs from *fuscipes* in having the second antennal joint transverse at apex on inner side, not slightly produced centrally, so that the third joint is longer than the greatest length of second; the costa with the setulae more widely placed and as long as or longer than diameter of costal vein.

Female.—Differs from the female of *fuscipes* as does the male, and, in addition, the second, third and fourth fore tarsal joints are much more distinctly broadened, the fourth being less than twice as long as its greatest width.

Length, 6 to 7.5 mm.

Type.—♀; Tuscola, Illinois, March 29, 1918, taken by the writer alongside the Illinois Central Railroad just north of the depot, [Illinois]. *Allotype*.—♂; Urbana, Illinois, Cottonwood Grove, April 16, 1915, (J. R. Malloch). *Paratypes*.—Two specimens, same data as type; one specimen, Dane County, Wisconsin, April 10, 1900, (W. S. Marshall); Champaign, Illinois, March 29, 1919, (T. H. Frison).

PROSALPIA Pokorný

This genus is not synonymous with *Eriphia*; the latter belongs to the subfamily Phaoniinae. Both of the American species known to me, and also *areolata* Walker, are distinguished from

their allies by having two very long, strong bristles on the hind tibia beyond the middle, one on the antero-dorsal and the other on the postero-dorsal surface. The eyes of the females are not more widely separated as a rule than are those of the male.

***Prosalpia angustitarsis* sp. n.**

Male.—Black, slightly shining, with dense yellowish brown pruinescence. Head black, orbits, face and cheeks with silvery pruinescence, interfrontalia opaque, sometimes reddish. Thorax with two narrow shining black vittae, which are fused with the broad lateral pair, giving the thorax the appearance of being bivittate. Abdomen with a linear black dorso-central vitta; hypopygium glossy black. Legs black. Wings clear, conspicuously yellow at bases. Calyptrae and halteres yellow.

Eyes separated by about the width across posterior ocelli; orbits narrow, not obliterating interfrontalia, the former with long bristles on lower half, the latter with a pair of long cruciate bristles; parafacial at base of antennae much wider than third antennal joint, very much narrowed below; cheek about as high as widest part of parafacial, armed with long bristles along lower margin; antennae not extending to mouth-margin, third joint narrowed in middle, about 1.5 as long as second; arista pubescent, with a very short basal swelling. Presutural acrostichals irregularly two-rowed, two or three pairs of moderate length; prealar bristle very long; sternopleurals 2:3. Abdomen about as long as head and thorax combined, cylindrical; hypopygium small, rounded, basal segments distinct; fifth sternite with broad, apically rounded, knife-shaped processes, which have some very minute hairs along the basal half of their inner margins and are otherwise bare, except for a few bristly hairs on the outer third of their surfaces. Fore tibia with one or two short antero-dorsal and one very long posterior median bristle; mid and hind femora with stout bristles on antero- and postero-ventral surfaces; mid tibia with one antero-dorsal, one postero-dorsal and one or two posterior bristles; hind tibia with one anterior, one posterior, two antero-dorsal and two postero-dorsal bristles. Outer cross-vein nearly straight.

Female.—Similar in color to the male.

Eyes separated by about twice the width across posterior ocelli; fore tarsi not broadened; hind tibia usually with an additional antero-ventral bristle; abdomen checkered on dorsum, pointed at apex.

Length, 7.5 to 9 mm.

Type.—♀; Machias, Maine, July 22, 1909, [B. S. N. H.] .

Allotype.—♂; topotypical. *Paratypes*.—One male, Echo Lake, Mt. Desert, Maine, July 17, 1918; one male, Southwest Harbor, Maine, July 13, 1918; female, Machias, Maine, July 22, 1909; female, Boisdale, Cape Breton, Nova Scotia, July 18 to 19.

Type and allotype are in the collection of the Boston Society of Natural History, male and female paratypes are in the collec-

tion of the Illinois Natural History Survey, a male paratype is in the collection of The Academy of Natural Sciences of Philadelphia; last female specimen in the collection of the American Museum of Natural History.

All except the last specimen were taken by Mr. C. W. Johnson.

The female of this species differs from any other in the genus known to me in having the fore tarsi slender.

***Hammomyia marylandica* sp. n.**

Male.—Black, subopaque, densely gray pruinose. Thorax rather indistinctly trivittate. Abdomen with a complete dorsal vitta, and a dark area on each side of each tergite anteriorly. Tibiae reddish, the fore pair darker.

Eyes separated at narrowest part of frons by about twice the width across posterior ocelli; each orbit with four or five weak bristles; interfrontalia with a very weak pair of cruciate bristles in front of anterior ocellus; antennae about three-fourths as long as face, third joint over twice as long as second; arista about one-fourth longer than antenna, densely short-haired, the longest hairs a little longer than its basal diameter; parafacial much wider than third antennal joint and two-thirds as wide as height of cheek. Thorax with the presutural acrostichals two-rowed; prealar bristle absent. Fifth sternite with much shorter processes than in *paludis*. Fore tibia with one or two median posterior bristles; fore tarsus longer than fore tibia; mid tibia with one antero-dorsal, one postero-dorsal and two or three posterior bristles; hind femur with the antero-ventral bristles more widely spaced than in *paludis*, the postero-ventral surface with a few median bristles; hind tibia with three or four antero-ventral, antero-dorsal, postero-dorsal and posterior bristles, the latter short. Length, 6 to 7 mm.

Type.—♂; Beltsville, Maryland, May 13, 1917, (W. L. McAtee). *Paratypes*.—1 ♂, topotypical; one male, Mt. Washington, New Hampshire, 3840 feet, August 6, 1909, (W. Reiff).

The type was returned to the collector.

The distinctly haired arista, much more widely separated eyes and longer processes of fifth sternite serve to separate this species from *paludis*, to which it is most nearly related.

***Pogonomyza proboscidalis* sp. n.**

Similar in color to that of *spinosissima* Malloch, the antennae entirely black.

Male.—Differs from that species in having the fifth abdominal sternite with much longer, more widely separated hairs on lower margin, the legs much stouter and shorter, with the mid femora conspicuously thicker than in *spinosissima*, the fore tibia with two bristles, one antero-dorsal, one posterior, the mid femur without the antero-ventral bristles, the hind femur with the

postero-ventral series of bristles nearly entire and stronger, and the costal thorns unequal in length.

Female.—Similar to the male in color, the abdomen unmarked.

Frons about one-third the head-width, each orbit about one-third as wide as interfrontalia, with five to seven bristles in the usual arrangement, the small setulose hairs absent or present only on upper third; cruciate bristles normally present, strong. Abdomen ovate, with strong apical bristles on all segments and discal bristles on segments two to four; genitalia without thorns. Legs as in male except that the hind tibiae lack the posterior bristly hairs.

Length, 3.5 to 6 mm.

Type.—♂; Swarthmore, Delaware County, Pennsylvania, May 21, 1905, [A. N. S. P., Type no. 6232]. *Allotype*.—♀; topotypical. *Paratypes*.—♂ and ♀, same data; ♀, same locality, May 27, 1905; 1 ♀, Swarthmore, Pennsylvania, June 22, 1907; 1 ♀, same locality, May 28, 1907; 1 ♀, same locality, June 4, 1905.

***Hylemyia innocua* sp. n.**

Male.—Similar in color to *setifer* (cf.), the thorax less distinctly pruinulent and the abdomen with a black suffusion on anterior third of each tergite.

Head as in *setifer*, the parafacials at base of antennae narrower than third antennal joint. Thorax with one long and two or three pairs of short pre-sutural acrostichals; prealar about one-third as long as the bristle behind it. Abdomen slightly depressed, narrow, tapered apically; hypopygium normal, superior forceps with five or six very long bristles on each side, inferior pair long and slender; fifth sternite with a blunt-tipped bristle as in *gracilipes* (fig. 31). Fore tibia as in *gracilipes*; fore tarsus compressed, subequal in length to tibia; mid tibia with armature as in *gracilipes*; mid tarsus much shorter than tibia, the basal joint usually with a few long setulose hairs on dorsum; hind femur with a series of bristles on antero-ventral surface, which are very short at one-third from base and become gradually longer to apex; hind tibia with three or four antero-ventral, about eight irregular antero-dorsal and three postero-dorsal bristles, the posterior surface with a few setulose hairs on basal half; claws and pulvilli of mid and hind tarsi much shorter than those of fore pair. Costal thorn small; veins three and four convergent apically.

Female.—More densely gray pruinulent than male. Interfrontalia largely reddish. Thorax not vittate. Abdomen with a dorso-central vitta and lateral reflections blackish.

Tibial armature as in male, but the bristles all stronger, especially the one on the antero-dorsal surface of the mid tibia; apical posterior bristle on fore tibia pointed. Costal thorn and setulae longer than in male.

Length, 4 to 5 mm.

Type.—♂; New Bedford, Massachusetts, (Hough). *Allotype*.—♀; topotypical. *Paratypes*.—Five males and one female,

topotypical; one male, Lewisport, Newfoundland, July to August 1905, (L. P. Gratacap); one male and two females, Godbout, Quebec, Canada, July 25, 1918, (E. M. Walker).

Type in the collection of the Illinois Natural History Survey; paratypes are in the collections of the Academy of Natural Sciences of Philadelphia, Boston Society of Natural History, Canadian National Collection, and the American Museum of Natural History.

This species belongs to the same group of species as *fuscipes* Zetterstedt and is not closely related to *gracilipes*, though possessing the same form of apical bristle on fore tibia, and for this reason placed with it in this paper.

***Hylemyia gracilipes* sp. n.**

Male.—Black, subopaque, densely gray pruinose. Head black, anterior margin of frons and parafacial at base of antennae usually reddish; palpi fuscous. Thorax not distinctly vittate. Abdomen with a narrow dorso-central black vitta. Legs pitchy black, knees and usually the tibiae paler. Wings clear, veins yellowish.

Eyes separated by a little more than width of anterior ocellus; parafacial at base of antenna as wide as third antennal joint, slightly narrowed below; cheek a little less than twice as high as width of parafacial, with a series of bristles along lower margin; arista with its longest hairs about twice as long as its basal diameter. Presutural acrostichals two-rowed, one pair usually longer than the others; prealar absent or minute; sternopleurals 1:2. Abdomen slender, depressed; hypopygium of moderate size, the inferior forceps very long, not very slender, flattened apically; fifth sternite as in *angusta* Stein (see fig. 31). Legs slender; fore tibia with a posterior median bristle and a long, curved, blunt-tipped apical bristle on posterior side; mid tibia with one or two postero-dorsal and posterior bristles; mid tarsus with the apical bristle on posterior side of segments two to four longer than normal; hind femur with five or six short, widely-spaced bristles on apical three-fourths of antero-ventral surface, postero-ventral surface unarmed; hind tibia usually with three bristles on antero-ventral, antero-dorsal and postero-dorsal surfaces. Wings rather narrow, slightly pointed; costal thorn small but distinct. Length, 5 to 6 mm.

Type.—♂; Lima, Montana, July 1, 1913, [Mont. Exp. Sta.].
Paratypes.—Four males, topotypical; one male, Armstead, Montana, July 3, 1913.

This species is very closely related to *angusta* Stein, but the latter has the apical half of the posterior surface of fore femur densely covered with short, stiff, decumbent hairs, while *gracilipes* has the hairs sparse and erect.

Hylemyia attenuata sp. n.

Male.—Black, slightly shining, covered with dense grayish pruinescence. Head black, orbits, face and cheeks with whitish pruinescence. Dorsum of thorax faintly trivittate. Abdomen with a black streak in middle and lateral checkerings of same color on dorsum of each segment, one spot on each side at base of each segment appearing brown in certain lights. Legs black. Wings grayish, the veins black. Calyptrae white, fringes black. Halteres yellow.

Eyes separated by less than width across posterior ocelli; parafacial wider than third antennal joint and over half as wide as height of cheek, the latter with a few long marginal bristles, three of which are directed upwards; arista apparently bare except under a high magnification. One long bristle on the presutural acrostichal area; prealar bristle minute. Abdomen very slender, the segments, except the apical one, longer than broad; hypopygium small; fifth sternite sparsely bristled. Fore tibia with one median posterior bristle, the apical blunt bristle short; fore tarsus compressed, subequal in length to tibia; mid femur with two or three bristles at base on antero-ventral surface and six or seven on basal half of postero-ventral surface; mid tibia with two or three posterior bristles; mid tarsus shorter than tibia, with long setulose hairs on dorsal surface of basal joint, the next three joints dilated, each with a stout, curved, sharp-pointed bristle at apex on posterior side, which is longer than the joint upon which it is situated; hind femur with a series of moderately long bristles from near base to apex on antero-ventral surface, the postero-ventral surface with a series of short hairs; hind tibia with three or four antero-ventral, three or four antero-dorsal and three long postero-dorsal bristles, the posterior surface with six or seven short setulose hairs above middle; hind tarsus subequal in length to tibia. Costal thorns minute; outer cross-vein nearly straight; veins three and four slightly convergent. Length, 5.75 mm.

Type.—♂; Claremont, California, (Baker), [Illinois].

Hylemyia megacephala sp. n.

Male.—Black, slightly shining, densely gray pruinose. Head black, orbits, parafacial and cheeks with white, almost silvery pruinescence, face less conspicuously pruinose; interfrontalia when seen from above opaque black; antennae and palpi black. Thoracic dorsum with a narrow brown stripe along bases of acrostichals on anterior half, on each side of which, in front of suture, is a narrow fuscous vitta, and between the dorso-centrals and the intra-alars there is a broad, rather indistinct, interrupted fuscous vitta. Abdomen with a narrow uniform black dorso-central vitta, the anterior margins of segments very narrowly blackened; hypopygium pruinose. Legs black. Wings very slightly brownish, the outer cross-vein slightly clouded. Calyptrae and halteres whitish yellow.

Eyes at narrowest part of frons separated by over twice the width across posterior ocelli; orbits almost linear above, broadening below, the interfrontalia therefore almost uniform in width, each orbit with five incurved

bristles, the surface otherwise almost bare; frons at base of antennae very decidedly protuberant, the parafacial about twice as wide at that point as at lower margin of eye; antennae large, extending almost to mouth-margin, third joint broad, at least twice as long as second; arista subnude, with an elongate swelling at base, second joint almost twice as long as thick; cheek about one-sixth as high as eye, the lower margin with two or three series of bristles, the upper one posteriorly and the upper and lower at anterior margin of eye being upwardly curved; vibrissa strong, four or five strong bristles below it and a number of strong setulae parallel to the series, several of them above level of vibrissa; proboscis stout and short. Thorax with five or six pairs of very closely placed setulae in the acrostichal series in front of suture; prealar bristle over half as long as the one behind it; sternopleurals 2:2. Abdomen subcylindrical; hypopygium small; fifth sternite with the processes short, each with a distinct rounded swelling on the inner side at middle, the inner margin of which is glossy and apparently chitinized, apices of processes rounded, their surfaces with short, moderately dense hairs. Fore femur with short setulose hairs on antero-ventral surface, without strong bristles; fore tibia with one antero-dorsal, two postero-dorsal and two postero-ventral bristles; fore tarsus distinctly longer than fore tibia; mid femur with one or two bristles on antero-ventral surface at or beyond middle and four or five at middle on postero-ventral surface; mid tibia with one antero-dorsal, two postero-dorsal and three or four postero-ventral bristles, the latter weak; hind femur with a complete series of moderately long bristles on antero-ventral surface, four or five on middle third, and one near tip on postero-ventral surface; hind tibia with from five to seven bristles of irregular lengths on antero-dorsal surface, three or four on postero-dorsal surface, a series of from five to seven short bristles on antero-ventral surface, and from three to six setulose hairs on basal half of posterior surface. Costal thorns small, veins three and four subparallel, outer cross-vein slightly curved.

Female.—Similar in color to the male; the dorso-central vitta on abdomen, however, is slightly tapered from anterior to posterior margin on each segment.

Frons a little over one-third of the head-width, orbits wider than in the male, each in addition to the five infraorbitals with three supraorbitals, the anterior one, and sometimes the second, directed forward; cruciate bristles absent, the triangle as in the male, not extending to middle of interfrontalia. Abdomen tapered apically, the apical segment without thorns. Otherwise as in male except that the tarsal claws and pulvilli are much shorter.

Length, 7 to 7.5 mm.

Type.—♂; Swarthmore, Pennsylvania, May 5, 1907, [A. N. S. P., Type no. 6233]. *Allotype*.—♀; same locality, May 6, 1906. *Paratypes*.—Females, topotypical, June 18, 1905; one male and one female, Auburndale, Massachusetts, May 22.

This species differs from any in the genus, so far described from this country, in the shape of the head and fifth abdominal sternite and in armature of the fore tibia.

Hylemyia bicrucata sp. n.

Male.—Differs from the preceding species in having the thorax and abdomen less densely pruinose, the former without a brown vitta on center, and the latter with a much broader, tapered dorso-central vitta; the wings are also more noticeably brownish.

The head is somewhat similar to that of *megacephala*, but the frons is not so noticeably protuberant; the orbits have more numerous and weaker bristles, and there are some interspersed weak hairs present; there are two pairs of cruciate bristles on the interfrontalia, the upper pair weak, the antennae are short, the third joint being about 1.5 as long as second, the arista has a very short basal swelling, and the second joint is not longer than broad, the cheek has longer but weaker bristles, especially behind the vibrissa, and the proboscis is thinner. The thorax has on the acrostichal region in front of suture three or four pairs of long, slender, moderately widely separated bristles and a number of interspersed hairs; prealar bristle over half as long as the one behind it, sternopleurals 2:2. Abdomen cylindrical, but little tapered apically, hypopygium protuberant on venter, rounded; fourth sternite very broad, with a fringe of long bristles along each lateral margin; fifth sternite with large processes, which are bare except on upper, or outer, third of their surfaces, the lower edge sharp, knife-like, the apices broadly rounded. Fore tibia with two or three bristles, one or two antero-dorsal and one posterior; fore tarsus decidedly longer than fore tibia; mid femur with a series of long bristles on basal two-thirds of antero- and postero-ventral surfaces; mid tibia with one antero-dorsal, two postero-dorsal and two posterior bristles; hind femur with bristles as in *megacephala*, hind tibia with from four to five bristles of irregular lengths on antero-dorsal surface, three strong bristles and three or four interspersed long setulose hairs on postero-dorsal surface, and two or three bristles on antero-ventral surface, the posterior surface without distinct armature. Costal thorns very small; third vein ending almost exactly in wing tip, fourth subparallel with third, but ending much behind wing tip; outer cross-vein slightly curved. Length, 7.5 mm.

Type.—♂; Great Caribou Island, Labrador, July 27, 1906, [Illinois].

Hylemyia inaequalis sp. n.

Male.—Black, densely gray pruinose. Antennae black; palpi fuscous, slightly paler at bases. Thorax with a narrow central brown vitta, and a broad poorly defined one on each side along the line of dorso-centrals. Abdomen with base of each dorsal segment indistinctly blackened and the center with a broad black vitta. Legs black. Wings very noticeably paler. Calyptrae and halteres yellow.

Eyes separated by width across posterior ocelli; parafacial in profile as broad as third antennal joint at base of antennae, slightly narrowed below; third antennal joint slightly tapered to apex; arista with longest hairs as long as its basal diameter; cheek a little over one-fourth as high as eye, the lower margin with a few bristles, some of which are directed slightly upward;

proboscis not noticeably thicker than normal. Thorax with one to two pairs of well-developed presutural acrostichals; prealar bristle distinctly over half as long as the one behind it; sternopleura with three bristles. Third ventral abdominal segment armed with longer decumbent bristles on its disc than are any of the other segments; second dorsal segment slightly elongated; hypopygium small; fifth ventral segment with a few long bristles on outer half of each process up to apex. Fore tibia with one antero-dorsal and two postero-ventral bristles; tarsus slender, longer than tibia; mid femur with three to five long postero-ventral bristles; mid tibia with one antero-dorsal, one postero-dorsal and two posterior bristles; hind femur without strong postero-ventral bristles, the antero-ventral surface with four to seven bristles on apical half; hind tibia with two to four antero-dorsal and three or four postero-dorsal bristles, the antero-ventral surface with two to five short setulae, and the postero-ventral surface with five to seven weaker setulae. Costal thorns both moderately long; veins three and four subparallel, outer cross-vein nearly straight. Length, 5 to 6 mm.

Type.—♂; Oregon, Illinois, June 19, 1917. *Paratypes*.—Males; same locality, June 19 and 20, 1917, (J. R. Malloch). Type and paratype in the collection of the Illinois State Natural History Survey; paratype in the collection of the Academy of Natural Sciences of Philadelphia.

This species differs from *linearis* Stein in having two posterior fore tibial bristles, and no anterior bristle on mid tibia in addition to the antero-dorsal one; in other respects the species agree closely.

***Hylemyia occidentalis* sp. n.**

Male.—Black, shining. Frontal triangle, facial orbits and cheeks reddish brown; orbits overlaid with silvery pile; palpi black, antennae black; arista black on the basal swollen portion, remainder yellowish. Thorax with whitish pruinescence on disc, when viewed from behind more or less distinctly quinque-vittate. Abdomen with a broad irregular dorso-central black stripe; hypopygium slightly pruinose. Legs black. Wings slightly infuscated on anterior half. Calyptrae white. Halteres yellow.

Eyes narrowly separated above, interfrontalia obliterated at narrowest part of frons; triangle large; facial orbits in profile protruded as far as width of third antennal joint; cheek nearly twice as wide as orbit in profile; marginal bristles numerous and strong, curving upward but not invading cheek except along margin; face straight, mouth-margin not much protruded; antennae of moderate length, third joint 1.5 as long as second; arista swollen for a short distance at base, minutely pubescent; palpi long, slightly dilated, hairy. Acrostichals long, three or four pairs proximad of suture; prealar bristle over half as long as supra-alar. Abdomen slender, slightly tapered to apex, segments broader than long, hypopygium large, protruding ventrally;

fifth ventral segment with slender processes which are armed with long bristles on their entire length. All tarsi compressed, the fore pair noticeably so; fore tibia with one posterior bristle; mid tibia with one anterior, two postero-dorsal and two postero-ventral bristles; hind femur bare on postero-ventral surface, bristled from base to apex on antero-ventral surface; hind tibia with three antero-ventral, six or seven unequal antero-dorsal, three strong and two or three weak postero-dorsal, and usually two or three weak posterior bristles. Costal thorn about as long as inner cross-vein; last section of fourth vein 1.75 as long as preceding section.

Female.—Differs from the male in having the frons one-third the width of head, interfrontalia with strong cruciate bristles, thorax and abdomen less bristly and more distinctly pruinulent, the thorax rather distinctly trivittate, the mid tibia with a bristle on the antero-ventral surface below the anterior one, the costa distinctly setulose and the costal thorn longer.

Length, 5 mm.

Type.—♂; Washington State, April 4 to 20, 1893, (Kincaid), [Illinois].

Resembles *muscaria* Fabricius, but differs in antennal structure and in chaetotaxy.

***Hylemyia setifer* sp. n.**

Male.—Black, shining, densely grayish pruinulent. Head entirely black, or with the anterior margin of frons and part of the parafacials reddish; orbits, face and cheeks with white pruinulences. Thorax with three faint brown vittae. Abdomen with a subtriangular black spot on dorsum of each segment. Legs black.

Eyes separated by about width between posterior ocelli; arista with its longest hairs about twice as long as its basal diameter; parafacial as wide at base of antennae as width of third antennal joint. Presutural acrostichals two-rowed, irregular; prealar bristle small. Abdomen narrow, depressed; hypopygium of moderate size, inferior forceps slender, rather long; fifth sternite with numerous long unequal bristles. Fore tibia with one or two posterior median bristles, the apex without any bristle on posterior side; fore tarsus longer than tibia; mid tibia with or without a small antero-ventral setula, with an antero-dorsal bristle, and two postero-dorsal and posterior bristles; hind femur with a series of closely placed bristles on antero-ventral surface, the longest bristles at middle, and a series of shorter bristles on basal half of postero-ventral surface; hind tibia with about six antero-ventral, four antero-dorsal and three postero-dorsal bristles, the posterior surface with an almost complete series of setulose hairs. Costal thorn long, costal setulae a little longer than diameter of costal vein. Length, 5 to 6 mm.

Type.—♂; Grant, Colorado, 10,000 feet, July 20, 1916, (E. G. Jackson). *Paratypes*.—One male from each of the following: Bozeman, Montana, June 26, 1915; July 23, 1914, July 9, 1917;

Gallatin County, Montana, July 24, 1917; Hot Springs, Montana, July 3, 1917; Tennessee Pass, Colorado, July 23, (J. M. Aldrich).

Type is in the collection of the U. S. Bureau of Biological Survey.

***Hylemyia bicaudata* sp. n.**

Male.—Black, covered with dense drab gray pruinescence. Head black, orbits, face and cheeks with dense white pruinescence. Thorax without distinct dorsal vittae, the lateral margins broadly gray pruinose. Dorsum of abdomen with a broad black opaque triangle on each segment; hypopygium distinctly shining; fifth ventral segment glossy. Legs black. Wings slightly grayish. Calyptrae white. Halteres whitish yellow.

Eyes separated by about the distance between posterior ocelli, the space very much broadened anteriorly; parafacial in profile equal in width to width of third antennal joint and over half as wide as height of cheek; antennae short, third joint but little longer than second; arista almost bare, very much swollen at base. Dorsum of thorax almost devoid of short hairs; post humeral bristle duplicated; presutural acrostichals moderately strong, irregularly two-rowed; prealar bristle usually present, weak, less than half as long as the bristle behind it. Abdomen depressed, the segments subequal, with long, rather sparse dorsal hairs; apex of abdomen swollen, the fourth visible dorsal segment extending down over sides and overlapping fifth sternite, the latter glossy black, with the posterior lateral angles extended, each armed with a pencil of black, downwardly directed bristles. Fore femur unarmed on antero-ventral surface; fore tibia unarmed at middle; fore tarsus noticeably compressed, almost equal in length to fore tibia; mid femur with a few antero- and postero-ventral bristles on basal half, the latter much the longer; mid tibia with one postero-dorsal bristle near apex; hind femur with a complete series of long, rather widely separated bristles on antero-ventral surface, those on postero-ventral surface much shorter and weaker, confined to basal half; hind tibia with two to four postero-dorsal bristles, antero-dorsal surface with two to four setulae, antero-ventral surface with or without one or two very short setulae. Third and fourth veins very slightly convergent apically; costa slightly thickened at apex of first vein.

Female.—Differs from the male in having the interfrontalia reddish and the abdomen unmarked.

Frons slightly over one-third of the head-width; each orbit half as wide as interfrontalia. Legs similar to those of male, differing in having an antero-dorsal bristle on mid tibia and usually two on the postero-dorsal surface, and the postero-ventral surface of the hind tibia bare. The costa is more noticeably swollen than in the male.

Length, 2.75 to 3.5 mm.

Type.—♂; Grand Tower, Illinois, April 21, 1914, on bank of Mississippi River, (J. R. Malloch), [Illinois]. *Allotype*.—♀; Widewater, Virginia, April 2, 1916, on flowers of *Salix tristis*,

(W. L. McAtee). *Paratypes*.—One male, same data as type; four males and one female, same data as allotype; five males, Vienna, Virginia, April 18, 1915, on flowers of *Salix tristis*, (W. L. McAtee); one male and one female, Lafayette, Indiana, April 23, 1917, (J. M. Aldrich); one male, Algonquin, Illinois.

This is the smallest species of the genus known to me from this country. The fourth tergite sometimes covers the bristles on the fifth sternite to such an extent that they do not show very clearly, while in some specimens the tergite does not compress the sternite and the bristles then form a short series on each side.

Preoccupied and Synonymic Names

In my recent paper on Southwestern Diptera² I inadvertently used two preoccupied names in the genus *Hylemyia*. I now propose to change those names as follows:

Hylemyia spinidens n. n. for *spinilamellata* Malloch, nec Stein.

Hylemyia anthracodes n. n. for *anthracina* Malloch, nec Czerny.

The following name changes also must be made:

Hoplogaster californica n. n. for *Coenosia parvisquama* Malloch.³

Xenaricia Malloch⁴ is a synonym of *Hebecnema* Schnabl, (1889).

¹ Proc. Wash. Acad. Sci., ii, p. 444.

² Trans. Amer. Ent. Soc., xlv, p. 312 and 314, 1918.

³ Proc. Calif. Acad. Sci., (4), ix, p. 304, 1919.

⁴ Trans. Amer. Ent. Soc., xlv, p. 272, 1918.

EXPLANATION OF PLATES

Plate IV

- Fig. 1.—*Helina lysinoe*. Male hypopygium, one side, dorsal view.
 Fig. 2.—*Helina lysinoe*. Fifth sternite, apex only.
 Fig. 3.—*Mydaea persimilis*. Same view as number 1.
 Fig. 4.—*Mydaea persimilis*. Same view as number 2.
 Fig. 5.—*Hebecnema vespertina*. Same view as number 1.
 Fig. 6.—*Hebecnema vespertina*. Same view as number 2.
 Fig. 7.—*Trichopticus spiniger*. Male hypopygium, one side, dorsal view of superior forceps and apex of inferior forceps.
 Fig. 8.—*Trichopticus spiniger*. Fifth sternite, apex only.
 Fig. 9.—*Trichopticus conformis*. Male hypopygium, lateral view.
 Fig. 10.—*Trichopticus conformis*. Male hypopygium, dorsal view, one side.
 Fig. 11.—*Trichopticus conformis*. Fifth sternite, apex only.
 Fig. 12.—*Limnophora velutina*. Hind tibia, apex, posterior view.
 Fig. 13.—*Limnophora narona*. Hind tibia, apex, posterior view.
 Fig. 14.—*Hylemyia antiqua*. Prosternum.
 Fig. 15.—*Helina lysinoe*. Prosternum.
 Fig. 16.—*Limnophora narona*. Prosternum.
 Fig. 17.—*Eulimnophora arcuata*. Same view as number 7.
 Fig. 18.—*Eulimnophora arcuata*. Same view as number 8.
 Fig. 19.—*Limnophora tetrachaeta*. Same view as number 7.
 Fig. 20.—*Limnophora tetrachaeta*. Same view as number 8.
 Fig. 21.—*Limnophora velutina*. Same view as number 7.
 Fig. 22.—*Limnophora velutina*. Same view as number 8.
 Fig. 23.—*Limnophora extensa*. Same view as number 7.
 Fig. 24.—*Limnophora extensa*. Same view as number 8.
 Fig. 25.—*Limnophora angulata*. Same view as number 7.
 Fig. 26.—*Limnophora angulata*. Same view as number 8.
 Fig. 27.—*Limnophora narona*. Same view as number 7.
 Fig. 28.—*Limnophora narona*. Same view as number 8.

Plate V

- Fig. 29.—*Xenomydaea buccata*. Head of male, lateral view.
 Fig. 30.—*Limnophora obsoleta*. Head of male, lateral view.
 Fig. 31.—*Hylemyia gracilipes*. Fifth sternite of male.
 Fig. 32.—*Limnophora extensa*. Head of male, lateral view.
 Fig. 33.—*Limnophora alticola*. Head of male, lateral view.
 Fig. 34.—*Coenosia rufitibia*. Head of male, lateral view.
 Fig. 35.—*Limnophora pearyi*. Head of male, lateral view.
 Fig. 36.—*Limnophora clivicola*. Head of male, lateral view.
 Fig. 37.—*Coenosia flavicoxa*. Head of male, lateral view.
 Fig. 38.—*Limnophora angulata*. Head of male, lateral view.

Fig. 39.—*Linnophora torreyae*. Head of male, lateral view.

Fig. 40.—*Pegomyia unguiculata*. Fifth sternite, one process, from inner side.

Fig. 41.—*Coenosia denticornis*. Head of male, lateral view.

Plate VI

Fig. 42.—*Coenosia hypopygialis*. Abdomen of male, lateral view.

Fig. 43.—*Coenosia ovata*. Abdomen of male, lateral view.

Fig. 44.—*Coenosia errans*. Abdomen of male, lateral view.

Fig. 45.—*Coenosia nivea* var. *brunnescens*. Apex of male abdomen, lateral view.

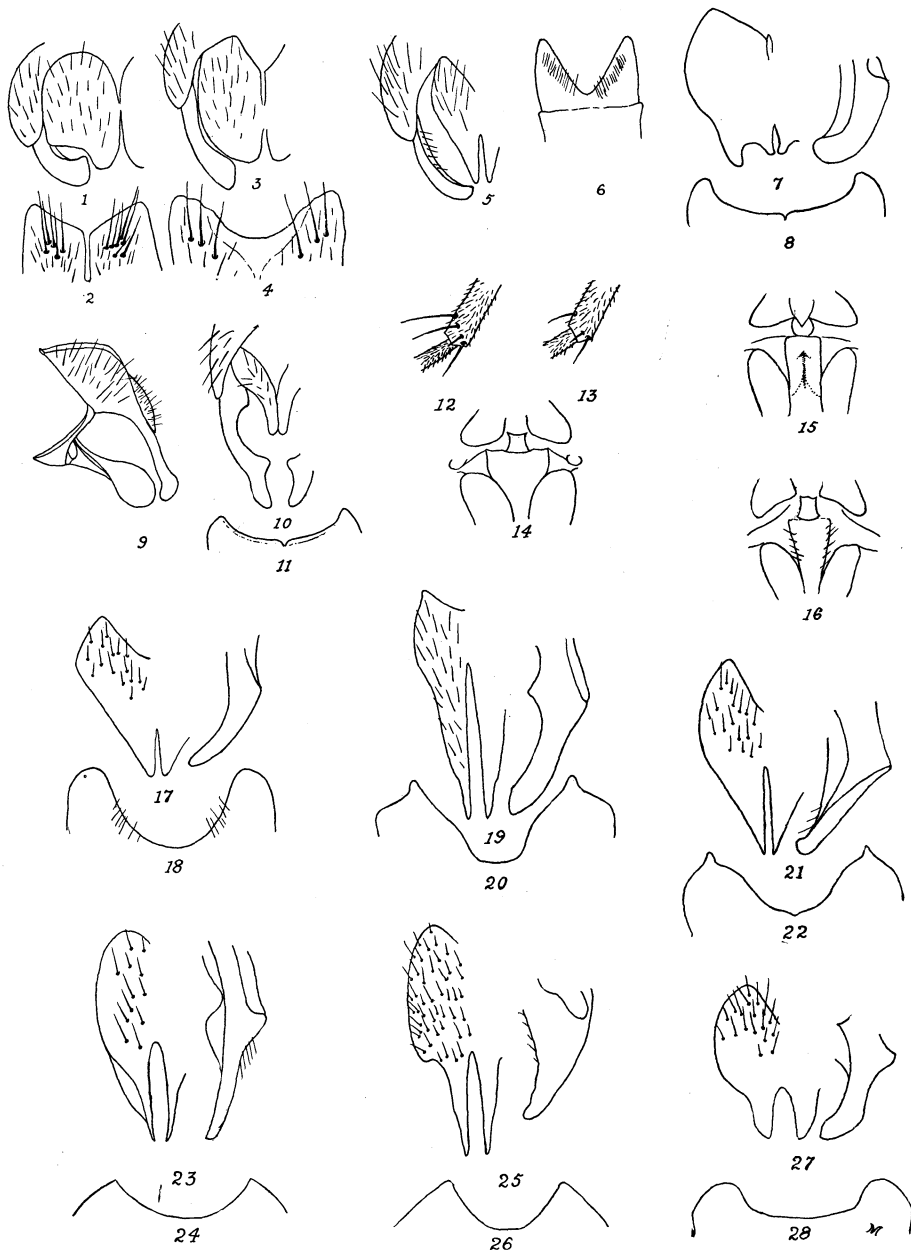
Fig. 46.—*Coenosia lata*. Abdomen of male, lateral view.

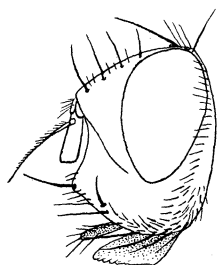
Fig. 47.—*Coenosia antennalis*. Abdomen of male, lateral view.

Fig. 48.—*Xenocoenosia calopyga*. Abdomen of male, lateral view.

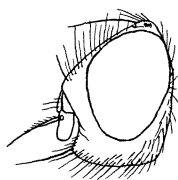
Fig. 49.—*Coenosia compressa*. Abdomen of male, lateral view.

Fig. 50.—*Coenosia dichæta*. Abdomen of male, lateral view.

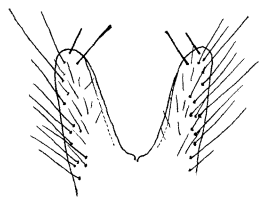




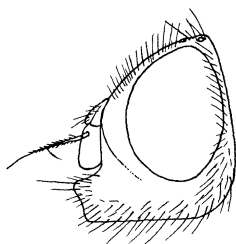
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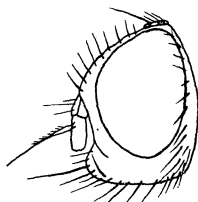
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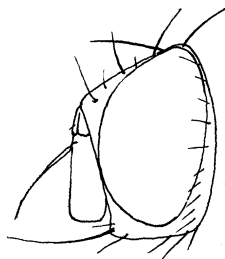
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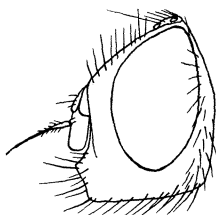
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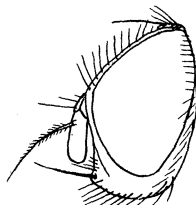
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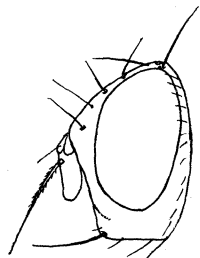
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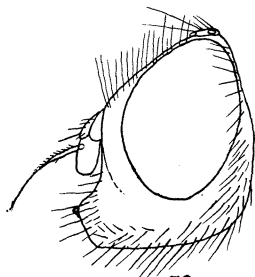
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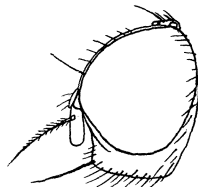
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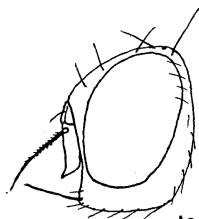
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